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The Dental Digest

January 1929

Editor~

GEORGE WOOD CLAPP, D. D. S.

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THE DENTAL DIGEST

VOLUME XXXV JANUARY 1929 NUMBER 1

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THE DENTAL DIGEST

George Wood Clapp, D.D.S., Editor

Allan M. Johnson, A.B., D.M.D., Associate Editor

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THE DENTAL DIGEST

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Immediate Denture Service

By FRED D. MILLER, D.D.S., Altoona, Pa.

When a patient must have all of his teeth extracted, do you send him to the exodontist and have them removed, then wait a few weeks before you take the impressions, or do you have an alveolectomy performed and make the denture within the next two or three days? Neither of these is immediate denture service as I understand it.

Immediate Denture Service

Suppose that a patient presents with something like the following condition. The molars are all missing on one side, one bicuspid stands alone with the second and third molars in position, and the six or eight anteriors are present. The centrals have separated and all the teeth are in a loosened condition from traumatic occlusion. The molars are pulpless. Surely this is not a case for a partial restoration, so you decide to remove all the upper teeth and construct a full upper case.

The first thing to be done is to extract the second and third molars, smooth off the buccal septal bone and allow initial healing to take place. Also, this is following the most modern thought on the subject of *serial extractions*. From three to eight days elapse before the next extraction, when the second bicuspids are removed. A few days later, or just as soon as initial healing has taken place, two full upper plaster impressions are taken, together with wax impressions of the lowers and a bite, because it is our intention to persuade the patient to have a "spare" set for emergencies. The cases are mounted on articulators by means of a face bow.

The shade and mould are selected and on the stone cast of the upper, with the anteriors in position, are outlined any fillings or inlays or characteristic coloring or staining that it is desired to reproduce in the finished cases.

The Set-Up

Figs. 1 and 2 show such a case with the eight upper anteriors in position, and the lower bite cast. Figs. 3 and 4 show the preparation of the cast for setting up the teeth. The right cuspid and central and the left lateral have been cut off and sockets made in the cast to imitate as nearly as possible the tooth sockets as they will be when the teeth are removed. They should be cut at least 3/16" or ¼" deep, and the gingival outline of the socket should be preserved. This is best accomplished by the use of a large drill on a lathe or a bone bur in the handpiece.

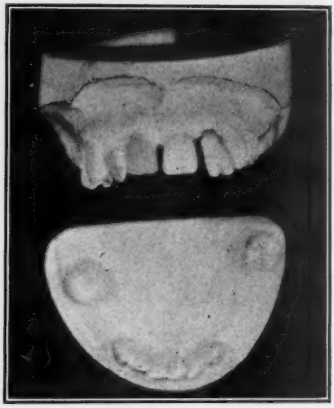


Fig. 1

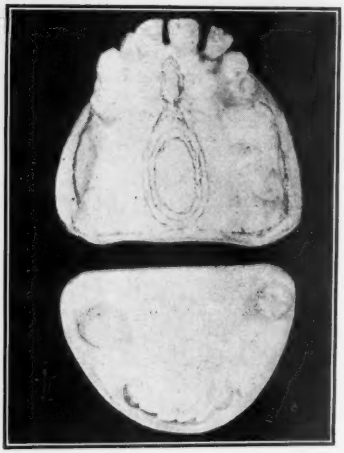


Fig. 2

The tooth that is to fit up into the socket should be ground so that it will not impinge on the labial plate or septal bone. The alternate teeth are set up with such improvement in alignment as is deemed necessary. These teeth are securely waxed and then one at a time the remaining teeth are cut from the stone cast, and the porcelain teeth which are to replace them are securely waxed in their proper places from 3/16″ to ¼″ into sockets which are cut for them in the manner described. Fig. 5 shows three teeth set up, and Figs. 6 and 7 show the complete set-up.

This operation is repeated on the second cast, and both cases are vulcanized and finished, being made as nearly like the natural teeth as possible.

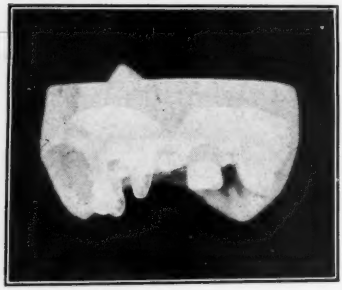


Fig. 3

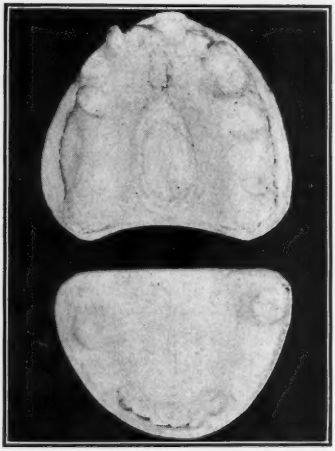


Fig. 4

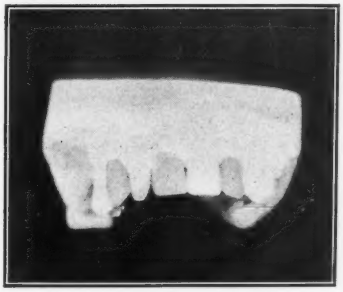


Fig. 5

Fig. 6

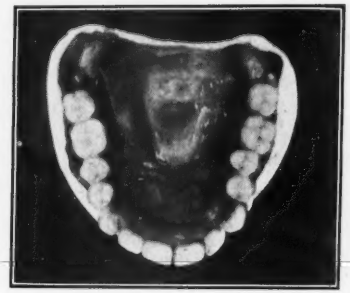


Fig. 7

If you do not extract teeth, then you must go with the patient to the exodontist, and this is the important part. It does not matter whether the teeth are removed under general or local anesthesia. The field of operation is isolated with cotton, all of the teeth are removed, and before the patient is permitted to spit, the denture is inserted in the mouth, pressed firmly into position and held there for just a minute. Then the patient is permitted to rinse the mouth. This is *Immediate Denture Service.*

And now let me answer some of the objections.

1. *The denture will not stay up.*

You will be agreeably surprised by the fact that in most cases it will, especially if you get your initial contact on posterior teeth, which can be accomplished with a slightly longer face-bow measurement. Just think over all the denture cases that have come to you with "plates" that have been in use for years, with practically no adaptation nor suction, made in the old way before anything was known about the manipulation of modeling compound, when the patient after years of use became an "expert juggler." Do not forget that pride will help to keep it up, and your Immediate-Denture-Service patient has never been without teeth—not for one instant.

2. *The denture will hurt.*

It will not hurt if properly constructed, which means the proper

preparation of the sockets on the stone cast so that there will be no impingement of teeth or vulcanite on the septum or labial plate of bone. Of course the occlusion must be properly balanced so that the stress is equalized and no tipping of the denture occurs during the various movements.

3. *The sockets will be sore and will not heal readily.*

Remember that you have placed this denture into the sockets immediately and held it in position, and you have kept the field of operation isolated from saliva until a well-organized blood clot is established. The sockets are protected by the clot and the denture, so that the post-operative complications are reduced to a minimum. Consequently the sockets heal without any difficulty.

If I have ever learned from experience any one thing in dentistry that has been a real pleasure, it is this very thing: that the control of post-operative pain is accomplished better by the isolation of the field of operation until the sockets are filled with a well-organized blood clot, before the patient is permitted to rinse the mouth. And then I instruct the patient not to make any suction on the socket that would disturb the clot. This applies to every extraction. Get away from the "pull out, spit out" method and apply surgical principles, with comfort to your patients and satisfaction to yourself.

4. *The patient cannot chew on such a plate.*

Masticating efficiency will be directly in proportion to the occlusal balance, and remember that these cases are to be rerimmed as soon as sufficient absorption has taken place to permit a rim in front. This will vary from three weeks to six months.

The Rerim

Rerimming is accomplished by taking one denture and trimming down all around and over the vault to relieve all muscles. With a tracing stick of modeling compound the rim is placed on the entire periphery and tempered. The denture is placed in the mouth, and with the teeth in central occlusion the muscles are manipulated in exactly the same manner as any muscle-trimmed impression. This is then thoroughly chilled and a model run in stone and sent to the laboratory to have the necessary vulcanite added. The patient goes home with the spare set in the mouth and consequently is never without teeth.

Now let me tell you just how modern this method is. At the present time my father, Dr. William B. Miller, is in his seventy-ninth year. He started to practice dentistry in 1869, fifty-nine years ago, and after practicing over five years he attended dental school in the old Pennsylvania Dental College, graduating in 1876. I asked him when he made his first case that was put in immediately after extraction, and he said that the first case was made shortly after he was married, which was fifty-four years ago. Since then he has been practicing *Immediate Denture Service.*

Of course the only modern things about this method are improvements in technic. Since the advent of modeling compound, muscle-trimming technic, stone casts, improved teeth and modern

laboratory service the operation has become a comparatively simple procedure.

ADVANTAGES OF IMMEDIATE DENTURE SERVICE

Patients are never without teeth. They never come to the office with them in their pocketbooks. Pride keeps them in their mouths, even if they do hurt in some places, which occasionally occurs when a muscle rides over an edge that is too high.

The best friends of the patients cannot tell that the teeth have been lost, if the natural conditions have been reproduced by restoring inlays, stains and discoloration. I have often had patients say, "So-and-So said my teeth look so much better and asked me if I had porcelain crowns on the discolored ones." In several cases the husband did not know that his wife had lost her teeth, and in one case the wife did not know that her husband had lost his.

The patient does not have to go into retirement, and what a satisfaction the spare denture is when the dentures are dropped and broken!

The maximum of bony structure is maintained and no sacrifice of this valuable bone is lost through extensive alveolectomy. The entire denture may be fitted at any time by the plaster-wash method.

This is *Immediate Denture Service,* and the spare denture is the 1928 economic necessity, according to our standard of living.

1122 Twelfth Avenue.

Further Evidence on the Subject of Recalcification of Enamel

By LYMAN A. WILSON, D.D.S., New York, N. Y.

In the November (1928) issue of THE DENTAL DIGEST there appeared an article entitled *Dr. Wilson and the Reconstruction of Enamel* by J. Leon Williams, D.D.S., L.D.S.

Let it be understood at the outset that I have only the very highest regard for Dr. Williams and his invaluable contributions to the scientific advancement of the dental profession. In my previous article* on the subject under discussion, to which Dr. Williams replied in his paper above referred to, I quoted reports of investigators who had delved deep into the possibility of recalcifying decalcified tooth enamel. I said at the time that any discussion of the subject would not be complete without a quotation from Dr. Williams, and I quoted from what I hold as the greatest and most complete exposition of the histology and pathology of dental enamel ever published.**

I shall now try to present the "certain phases of evidence not yet presented" which Dr. Williams deems necessary to an acceptance of my method of treating decalcification by taking up the question, is the process a vital or a chemical one, or some sort of combination of both? Now, I believe that Dr. Williams's knowledge of enamel pathology would not permit him to be deceived by any vague answer to that question. He knows that the white spots are due to the abstraction of inter-rod substance, that the opaque appearance is caused by prismatic effect or diffraction of light, that the action of acid which abstracts the inter-rod substance is a chemical action upon the enamel surface, and that the pulp has nothing to do with it.

Dr. Williams is aware that I hold no brief in favor of the internal theory of decay. All the cavities I ever saw in teeth began at the enamel surface and worked their way by a process of decalcification toward the pulp, and there is no difference between a cavity produced in a tooth in the mouth and a cavity produced in a tooth out of the mouth. Decay is decalcification induced by bacterial action in plaques and fermenting food debris. It is a chemical action, and the pulp has nothing to do with it.

I claim no originality for the statement that some teeth are harder than others, though I have seen soft teeth and hard teeth, and I accept Dr. Pickerill's classification as a matter of convenience without regard to the means by which the difference is acquired, but my opinion is that well-calcified teeth with smooth, glossy enamel presuppose a better state of dental health.

Secondary calcification is a physiological process. I have seen third molars and other teeth, removed from

* See THE DENTAL DIGEST, October, 1928.

** See *The Journal of Dental Research*, Vol. V, No. 3 (September, 1923).

their crypts because of impaction, speckled with white areas of "uncalcification" that presented precisely the same appearance as the white spots produced by acid in erupted teeth. These same teeth if erupted normally, upon coming in contact with the saliva, would become fully calcified like the other teeth in the same mouth, provided, of course, that the necessary calcific matter were present in the saliva.

Secondary calcification induced artificially is a chemical process, in that the calcific matter is introduced from an outside source instead of being produced or generated within the organism itself.

I have given this subject much thought and I have made many clinical and laboratory experiments *in vitro* before bringing this matter before the critical eyes of my colleagues at large, and I feel constrained to recall a remark attributed five centuries ago to our brother in science, Galileo, who in vindication of his well-founded theory of rotundity of the earth said: "The Church says that the earth is flat, but I *KNOW* that it is *ROUND*, because I have seen the shadow of it on the moon." Likewise have I observed the recalcification of these white opaque areas of incipient caries, like the freezing over of a mill pond, first around the edges of lesser depth, then sending stellate points of translucence toward the center until their convergence was complete and the entire area again translucent and glossy. I have seen the teeth of children a hopeless riot of decay, with the enamel as dull and lacking in luster as a gooseberry and offering no more resistance to a spinning bur than a broom-handle, caused to sparkle and shine like a pearl button and snap and crack under the bur after six months' use of a properly made tooth-enamel solution. I am greatly encouraged by the fact that Dr. Williams has for years privately urged the daily use of dissolved enamel as a toothpaste in the hope that there might take place some deposition of calcific matter into the carious surfaces, but he has always been confronted with the acid problem—with which I agree. The production of acid is indeed the crux of the situation, in so far as we possess knowledge of the cause of caries, but must it of necessity be lactic acid? True, as Dr. Williams says, very weak solutions of lactic acid will decalcify enamel, and cultures of tooth scrapings have shown the presence of the lactic-acid-forming bacillus, but may there not be some other acid produced in the plaque by other bacteria symbiotic with B. Acidophilus?

Of course the argument may be advanced that only one acid is necessary, provided it be a rapid decalcifier, and this we know lactic acid to be, but from some experiments I have made I am led to believe that other acid-forming bacteria do play a part in producing acid in the plaques. Whether or not this is a factor in the cause of caries I have not yet determined. Be that as it may, let us look backward a quarter-century to the time when B. Bulgaricus occupied the center of the stage as an important factor in longevity. The Metchnikoff theory rode high, but where is the informed man today who would support B. Bulgaricus

against B. Acidophilus? This may be irrelevant to the matter under discussion, but I mention it as evidence that sometimes our first conclusions are erroneous, even though based upon what we believe to be scientific data.

Dr. Russell W. Bunting and his coworkers in the laboratories of the Dental School of the University of Michigan report in *The Dental Cosmos* for October, 1928, under the title *Further Studies of the Relation of Bacillus Acidophilus to Dental Caries*, a survey of several thousand cases in which B. Acidophilus always accompanied active caries. Many cases are reported in which caries was found to be active, but cultures failed to show the presence of B. Acidophilus. However, in these same cases persistent effort gave a positive culture for this bacillus, indicating a fluctuating scale of activity, which accelerated a carious process when it went up and retarded it when it went down. Now here is a peculiar thing. After a carious process was initiated by B. Acidophilus and accelerated to a certain point, for some unknown reason the B. Acidophilus would disappear from the scene, giving negative results to many cultures, while the carious process remained active, which means, of course, that the decalcification initiated by the bacillus continued on without its presence, although it may be gathered from the report that no new cavities were initiated.

Now, I ask, why should there be a fluctuation in bacterial growth in a culture medium that we have always considered perfect, especially when nothing is done deliberately that would cause a fluctuation? Dr. Bunting was evidently inquisitive on this point himself, because he chose a series of patients whose mouths showed little or no carious condition, and who were at the same time free from B. Acidophilus, and infected them with acidophilus milk cultured with bacilli taken from the mouth of a patient exhibiting active caries. What happened? Dr. Bunting gives the answer: "In this group every case remained negative, and in no instance could the organism be recovered from the mouth twenty-four hours after the milk had been ingested." Other cases are reported as giving similar results, indicating the presence of a natural limiting factor which inhibited or destroyed all bacterial growth in excess of its toleration. As an alternative to this Dr. Bunting speculates upon the presence of an organism which by its activity and antibiotic relationship overwhelms the B. Acidophilus. This takes us back to one of my previous remarks in this paper as to whether B. Acidophilus was entirely responsible or whether a symbiotic bug shared the honor. It is now just a matter to decide what, if anything, symbiosis or antibiosis means to the bacteria themselves. Some of my experiments have shown the presence of B. Subtillis in symbiosis with the B. Acidophilus, and I have seen the B. Acidophilus diminish in generated cultures as the B. Subtillis multiplied.

If I am positive in the identification, and if this same action can be proved to take place in the mouth in the plaque, I think we shall have come close to at least one good and suf-

ficient reason why an unclean mouth with plaque-covered teeth is frequently found free from caries, and this altogether aside from the degree of calcification which the enamel may enjoy.

In the matter of mottled enamel there is much work to be done before we come anywhere near a solution to this engaging problem. I have begun correspondence with Dr. Oren V. Shaw of Colorado Springs, Colorado, who is eager to take up the treatment of this condition in its native habitat, with a view to trying my method on young children. Except for the knowledge that has been acquired by reading the works of Williams, McKay and Buest, my personal experience with this condition has been limited to the treatment of one case,* which cleared up nicely.

I think it quite likely, however, that if patients in the endemic districts are taken in hand very young (just coming into the eruption period of the secondary dentition), put on this treatment and continued on it with clocklike regularity, it will prove to be a preventive or corrective measure worthy of the effort.

I will freely extend my cooperation to any man or group of men of open mind who will take up this work with the object of alleviating the affliction of these children, and who would be more interested in conducting a humane work than in the scant satisfaction derived should the treatment fail.

Fig. 1

The crescent-shaped areas are dimly visible on the maxillary cuspid and lateral. The one on the central is not seen in this picture. Taken, in January, 1927.

In elaboration of the work published in the October issue of this journal the following cases are submitted as further evidence that recalcification of

* See THE DENTAL DIGEST, October, 1928.

dental enamel can be accomplished artificially.

CASE 1

Male, aged 24 years, gave a history of acute gastro-intestinal disturbances. The inability on the part of the patient to retain and digest solid food resulted in a loss of vitality and weight to the point of emaciation. A medical diagnosis of chronic appendicitis was finally arrived at, which was treated without surgical intervention. The general debilitated condition of the patient was reflected in the dental structures, in which the action of acid excretions from the buccal glands and the gingival crevice were evident.

Fig. 1 was taken in January, 1927, and shows the crescent-shaped, white opaque areas of incipient caries on the maxillary right cuspid, lateral and central incisors. The left side of the mouth was in the same condition, but to a somewhat less degree.

The difficulty of getting a good photograph of the anterior teeth is increased by their position in the arch as related to the full face view. The centrals will come nicely into focus, the laterals will be a little out and the cuspids will be entirely out of focus, unless one uses a stereoscopic camera. It is for this reason that all photographs submitted in this work are taken at nearly right angles to the labial surfaces of the teeth to be photographed.

Fig. 2 was taken in October, 1928, and shows the teeth as they appear now. The white opaque areas have become so completely recalcified that it is only with the aid of a strong magnifier that a slight condition resembling a cicatrix is visible under the glossy surface.

Fig. 2
Same teeth as in Fig. 1. By January, 1928, recalcification of the crescent-shaped areas was complete and they were no longer visible.

The dental treatment in this case was in cooperation with the systemic medication and consisted of natural tooth enamel obtained from the teeth of beef cattle, in acetic acid solution, used as a mouth-wash and augmented by the use of a toothpaste composed of the same solution combined with ingredients usually found in dentifrices. There can be no question that the calcific matter from the solution penetrated into these softened areas and became fixed and saved these teeth from premature destruction.

Fig. 3
The enamel of the upper third of the buccal surfaces of the maxillary cuspid and first bicuspid has been dissolved by the "acid drench."

CASE 2

Female, aged 26 years. In good health, no recent illness, but of sedentary occupation (artist), food habits fair with preference for refined foods and pastry.

This case (Fig. 3) is particularly interesting in that it presents an uncommon condition due to erosion. The photographs do not adequately show the depth and character of the depressions which have been formed in the teeth, owing to the peculiar smoothness and the reflection of light from the planes forming the sides of the depressions. Here we have a condition resembling *abrasion,* but it is not abrasion; it is *erosion* induced by an acid excretion from the gingival crevice, which slowly decalcifies the enamel.

The horizontal stroke of the toothbrush is not the cause of this trouble nor can enamel be removed as this has been unless it first be made soft by the action of an acid. Let it be observed that the eroded portion is close to the gingival border, where the "acid drench," if I may coin the term, would be confined to the tooth at night by capillary attraction when the lip, gum and labial surfaces of the teeth are in

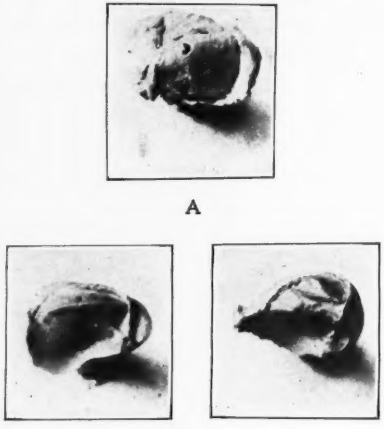
contact except for a minute space at that point where the erosion has taken place. It is at this point that the "acid drench" from the gingival crevice softens the enamel so that any frictional contact will carry it away.

The "acid drench" has dissolved the enamel from the gingival third of the upper cuspid and first bicuspid. The most prominent contours are still intact and unaffected by either acid or toothbrush action. The reason for this is that the acid in its travel from the gingival crevice has been neutralized by its action on the lime salts of the tooth close to the gum.

When enough enamel has been softened and carried away to form a groove or ditch across the tooth mesio-distally, a pool of diluted acid forms and the concavity increases in width and depth. On the other hand, if this cutting away of enamel were due to the abrasion of toothbrush action, it is logical to assume that the more prominent or bulbous contour would bear the brunt of frictional contact and be the first to wear away. The evidence is against this.

On August 9, 1927, C. Edmund Kells, of New Orleans, La., while upon his last visit to New York, called at my office and spent the greater part of the afternoon with me reviewing a number of cases I had under treatment for recalcification. Upon this case we spent much time in examination and discussion, during which Dr. Kells ventured the opinion that if this destructive process could positively be checked he would look upon it as a worthy accomplishment. He suggested that cement inlays be made of the depression and preserved for future test of fit to determine whether or not the depression had enlarged. The inlays were made as soon as convenient and are shown in Fig. 4. Sufficient time has now elapsed to show an enlargement if any has occurred. The fit of the inlays seems to be quite as good as when they were made.

The local treatment in this case was the same as that used in the previously recorded cases, accompanied by an alkalizing diet. A splint made of gold-plated wire similar to a Jackson orthodontic crib is made to snap over the teeth and carry a strip of litmus paper held so as to be in contact with the buccal surfaces of the teeth and gums and placed in position by the patient before retiring. A simple device embracing a few teeth on the side of the mouth is all that is necessary and the



A B C

Fig. 4
(A) Mandibular bicuspid
(B) Maxillary cuspid
(C) Maxillary bicuspid

Test inlays made at Dr. Kells's suggestion to see whether or not destruction was checked.

insertion and removal can be easily accomplished by the patient. The litmus paper is removed from the splint in the morning and placed in a pill box to be returned for examination. When, under the influence of the alkalizing diet, the membrane excretions no longer turn the litmus (blue) red, it is a fair indication that the body fluids are neutral.

The mouth is to the stomatologist what the barometer is to the mariner, and by those who see what others merely look at many signs may be read indicating the general physical condition of the patient. "The blood is the life" and must maintain an acid-alkaline balance in order to maintain life. Acid produced in the intestinal tract by a high protein diet breaking up into amino-acids must be eliminated through the usual channels and, when taken from the tissues by the blood, must be eliminated with the perspiration through the pores of the skin and excreted by the mucous membrane. It is interesting indeed to observe how an alkalizing diet of green vegetables, milk and orange juice will change the membrane excretions of the mouth in a month's time.

That a diet balanced in all the tissue-building and tissue-sweetening elements is worthy of trial I have proved to my own satisfaction. That it will neutralize the body fluids and mucous membrane excretions and reduce plaque formation to a negligible factor depends upon the persistence and sincerity of purpose of the patient.

1819 Broadway.

[PULP AMPUTATION]

Dr. G. V. Black taught that whenever a pulp was exposed by caries the immediate removal was the safest. Within recent years some have advocated the removal of the bulbous portion, leaving the soft tissue within the root canals. While a few cases may apparently do well under this management, the writer cannot believe this to be the safest method of procedure.

—BLAYNEY.

The Rise and Fall of Oral Hygiene In Bridgeport

By GEORGE WOOD CLAPP, D.D.S., New York, N. Y.

Thirteenth Article (Final)

The Political Situation Develops

In 1916 Dr. Fones was nominated for membership on the Board of Education by Mr. John T. King from the floor of a political convention then in session. After the event King called him up and told him what had happened. When asked why he had done it, he said he was satisfied that Fones was doing something worth while for the children of Bridgeport and wanted to put him in position to work to better advantage. Fones did not know King, had never considered seeking political preferment and does not believe that King had ever been in his office. Such a nomination was equivalent to election, and Dr. Fones took the place, which was later to be a hard political battleground.

King's efforts did not cease with Fones's nomination and election. He exercised great influence in Connecticut at that time, and he saw to it that the local politicians did not bother Fones at a time when their interference might have proved very embarrassing. From time to time he persuaded the Board of Appropriation to increase the appropriation for oral prophylaxis and in other ways gave the work the benefit of his strong personality. This great service for the children of Bridgeport should always stand to King's credit.

Dr. Fones was one of twelve members of the Board of Education. He found that there had been in vogue for some years what is known as the "committee system," by which the many affairs under the jurisdiction of the Board were divided into four parts, the Board being divided into four committees of three members each and the work of one division being assigned to one committee. Each committee reported to the Board the results of its labors, and the other members were expected to accept the committee's suggestions.

By virtue of his office the President of the Board had the right to meet with each committee and was the only member of the Board who had a comprehensive grasp of the manner in which the work of one committee dovetailed into the work of the other committees. This plan, in the hands of a president who was a politician, could easily make the Board a very important part of the political machine.

When Dr. Fones went on the Board, the President was Mr. Elmer Havens, whom he had known well for years. When Dr. Fones had been on the Board about a year and a half, he objected to voting on matters of which he knew little or nothing and to accepting conclusions from which he might differ if he knew more. He felt it to be against his principles and his duty to vote until he knew what he was voting for and why.

Mr. Havens as President of the Board of Education

Because Mr. Havens plays a very important part in what is to follow,

it would be highly desirable to have an exhaustive, accurate and impartial estimate of him as a public official. The writer's information is not extensive enough to make such an estimate possible, because he had no part in these events as they occurred, he has met Mr. Havens only once, and he has been dependent upon statements made several years after the occurrences in which we are interested.

Mr. Havens is an alert, affable gentleman, perhaps in his sixties. Among the relatively few people whom the writer met in Bridgeport, he did not encounter any ardent admirers of Mr. Havens, but found some who are distinctly friendly to him. They point out that he has been in public life for many years, and that he has a large personal following among the school teachers, who afford strong support for his policies.

His critics admit all these things, but they think that the President of the Board of Education should be a much bigger man than they feel Mr. Havens is. They say that he is without vision, without the ideals which the President of the Board of Education should cherish and seek to transmute into action, that he renders this public service because it affords him personal satisfaction, and they do not take at all seriously his oft-made threats to resign from the Board whenever his wishes are crossed.

An estimate of Mr. Havens is of importance to many of us in whose lives he does not directly figure because the death-blow to what Dr. Fones considers the most important phases of his work in the schools was administered when a Board of Education of which Mr. Havens was President did not vote to retain the preventive dental clinic. This returned it to the Board of Health, which could not carry on the program of health education in the classrooms. It was all perfectly legal and proper. It is a duty of the Board of Education to vote upon the conduct of any activity under its control, to decide how much money shall be expended and how it shall be used. This presentation has in it no inference that the members of the Board of Education failed to do anything that the law required them to do or did anything which the law did not permit. It is an effort to paint a picture of their breadth of vision and grasp as public officials when they were confronted with a great public opportunity.

"BY THEIR FRUITS YE SHALL KNOW THEM"

The Scriptures tell us that we may judge a man by his fruits, and in this way we may know Mr. Havens as an official far better for us than by the praise of friends or the criticisms by opponents. He was elected to the Board of Education in 1902, was Vice-President for some years and became President in 1913. From perhaps about 1910 to 1921 he is considered to have been the most responsible and powerful member of the Board of Education. During this time were established the conditions in the city schools described in the Van Sickle report.* Bridgeport, which ranked

* Part of this report was summarized in THE DENTAL DIGEST, August, 1928.

second in population and third in school attendance among the 168 cities and towns in Connecticut, ranked 154th in expenditure per school child for educational purposes and, by the same test, ranked at the bottom of a list of twelve representative American cities of about the same size. Under this Board the pupils received cheaper education and less of it than the children in any other of the twelve cities mentioned and the teachers were paid lower salaries and were required to teach larger classes than teachers in any other of these cities.

Disinterested observers recognize antagonism between Mr. Havens and Dr. Fones from as early as 1913. It had a foundation in personal matters, was increased by Dr. Fones's opposition to the committee system in the Board of Education and probably grew with the years.

Mr. Havens left the Board in 1921 because the number of members was reduced, returned in 1923, was made President and occupies that position as this is written.

Dr. Fones in Public Life

And now let us step out of our professional viewpoint of Dr. Fones and his work and try to see him for a moment as a public servant, just as we are viewing Mr. Havens. His most ardent admirers unhesitatingly admit that he is not well fitted to serve the public in matters in which politics play a great part, because he is not "practical," as the politicians seem to understand that word. For him matters of health and education are matters of principle, and any responsibility for them is a trust which is to be carried out in the best possible manner, without any shadow of turning to the right or left to humor or benefit this group or that. Any persons who, for personal gain or because of shortness of sight, persist in opposing the best service that can be rendered to the community will have only themselves to blame if the car of destiny runs over them.

It is not thus with the successful politician. He believes in principles—academically—but principles are to him very uncomfortable things. They are square-cornered, and they stay in their places and get in the way of those who are self-seeking. The politician who gets along with others of his kind by a program of give-and-take is always ready for a compromise. Isn't 50% of a principle or even 10% better than none if it enables him to keep his job, his income and his fame?

Dr. Fones did not think that in matters of health anything less than all of the principle, rigorously applied, was sufficient. He had seen the awful conditions in the mouths of Bridgeport children as they resulted from the lack of vision and effort on the part of some of the very men with whom he was now joining battle. He knew what this meant in the lives of the children. and sometimes in the hearts of the parents. He knew that these conditions cost the city a great deal more money than their correction ought to cost when his plans were in complete operation and had time to justify themselves. Knowing what he did, feeling the responsibility, so situated that he could give the time for leader-

ship, having nothing to gain for himself, it never occurred to him not to conduct the dental clinic and, later, the Board of Education for the benefit of the entire community without fear of or favor to any group.

THE MARCH OF THE CRUSADERS

It appears that there must have been on the Board of Education a number of others of somewhat similar spirit. That the end-result would be an apparent failure of their efforts and political annihilation for them seems not to have troubled them in the least. In June, 1922, while Dr. Fones was away from the city, he was elected Vice-President of the Board of Education and in November of the same year he was made President, which office he retained until November, 1923. It seems to have been a period of continuous fighting. After such study as the writer has been able to make, he cannot resist the conviction that it was a battle between a high-minded, public-spirited group on one side and on the other side a group of politicians who either cared far more for themselves and their own interests than they did for the children of the city or the city itself or were too devoid of ideals and vision to be entrusted with responsible positions. It is in the light of that conviction that the rest of the story will be told.

THE BATTLE IN ONE SECTOR

Many incidents which affected the final outcome must be passed over in this necessarily brief survey, but the fight which centered around the transfer of the dental clinic from the Board of Health to the Board of Education is too serious to be passed without any comment.

A law of the State of Connecticut, passed in 1919, gave power to school boards to employ hygienists and empowered boards of appropriation to appropriate money for such a purpose. It was under this law that, in 1921, the Board of Appropriation of the City of Bridgeport authorized the transfer of the dental clinic to the Board of Education. This opinion was opposed by the Mayor of Bridgeport, the City Attorney, the Common Council, the City Auditor and the Board of Health. Some of the city officials threw every obstacle in the way of securing funds for the payment of the hygienists, and they were successful in forcing the Board of Education suddenly to change the date of the spring vacation, after the teachers had made their plans for the usual dates, and this very naturally caused much ill-feeling among the teachers toward the Board of Education. This was, no doubt, part of the plan which led one of the Bridgeport papers to say: "The political enemies of Dr. Fones had pledged themselves to work for his elimination at the primaries this fall." Several hundred aggrieved teachers would cast several hundred votes for that elimination.

DR. FONES SEALS HIS POLITICAL DOOM

Two other incidents will serve to show how impracticable was Dr. Fones as a politician and how the conduct of the Board of Education, under his guidance as its President, aroused such

opposition to him that at the close of his term he was not even renominated for membership on the Board. With his passing passed also those policies in the conduct of the dental clinic which he knew to be most valuable to the community.

The first of these incidents was the closing of the City Normal School in the face of many local protests. Its closure made enemies for the Board of Education at a time when it could not afford more enemies than it already had.

The Building of the Warren Harding High School

The second incident is afforded by the way in which the Board of Education bought the land, secured the plans and let the contract for the building of the Warren Harding High School, which was to involve the expenditure of a very large sum of the city's money and might readily be the occasion for favored contractors to make very satisfactory profits.

It is related that a group of politicians, other than those mentioned in this article, who desired to have the high school in a certain location took options on a large block of property at that location. The Board of Education quietly purchased elsewhere the property required for the school and left those politicians in undisturbed enjoyment of their options. To make matters worse, the purchase was made through a concern which did not feel called upon to say anything about the transaction until it had been completed, at a special commission of only 3%.

The worst was yet to come! It was bad enough for the politicians last referred to to have lost the sale of the land and the commission on its purchase, but some profit could yet be made if only the job of designing and building the school, which was expected to cost about a million dollars, could be obtained under what some politicians would call *optimum conditions*, if they knew what the word meant. But for the plans the Board of Education went to a man in St. Louis whom it regarded as the outstanding school architect of the times and arranged for supervision with a firm of architects in Bridgeport which was in harmony with the spirit of the undertaking. It is said that when the local builders learned the state of affairs they entered into an agreement among themselves not to bid on the building, but that one of them could not resist the temptation to slip a bid in quietly. The story goes that at six o'clock of the night when the bids were to be opened that was the only bid that had been entered, and that bidder got the contract.

The building was completed after the Board of which Dr. Fones was President went out of office, and it is said that an almost unbelievable number of "extras" was found to be necessary.

Dr. Fones was repeatedly told, during the political campaign, by people whose names I do not know and who are not important to this story that his political opponents, who could not successfully reach him in any other way, would destroy the dental clinic which he had so painstakingly built up. On the 27th of December, 1923, the new Board of Education met

with President Havens in the chair. The question as to whether the Board should ask for the appropriation for the dental clinic for the year beginning in April, 1924, was brought up. The following petition from the dental hygienists, as reported in the Bridgeport *Times* of December 28th, was read:

"We, the undersigned members of the dental hygiene corps of the Bridgeport Public Schools, having worked under the Board of Education for nearly two years, and having found a closer cooperation of teachers and principals than previously, and having been able to carry the work on with greater benefit to the children, do hereby petition your honorable body to be allowed to remain under your jurisdiction, believing that it will be for the best interests of the children. This does not duplicate the work of any other department nor add to the sum total of the expenses of the city."

A member new to the Board, who may not have been familiar with the value of the dental clinic, moved that the Board should not ask for the appropriation. This motion was finally carried, and in April, 1924, the clinic returned to the Board of Health. This brought it directly under Dr. Coon. The appropriation of practically $42,000 for the year 1923 was reduced to $15,000 for the following year.

The blow had fallen. It had been administered legally, decently and courteously, without the raising of a voice or the least sign of the violent feeling which probably seethed beneath the surface. The City of Bridgeport still has ten dental hygienists, who doubtless serve it well. It has also a good central dental clinic.

And now let us study the effect of this decision with the eyes of those who have spent their lives trying to advance individual and perhaps community health through dental service and education. From this aspect that decision was a blow at the physical welfare of the children of Bridgeport, at the establishment of dental service on its proper plane and at the physical educational activities then being conducted by the staff in the schools.

Such a study is well worth while, because any dental clinic in any school system is likely to run into such a catastrophe. If one had been asked in 1923 what was the best established school dental clinic in the world, one would have unhesitatingly said, "That at Bridgeport." If any such clinic should have been safe from political interference on the basis of demonstrated value and professional and public approval, this should have been. Yet by one decision the features which its founders and developers considered of maximum importance were swept away.

It was a blow at the physical welfare of the children of Bridgeport because the clinic had become much more than merely dental service. The hygienists had been trained not only in dental prophylaxis but also in pedagogy, general hygiene and the principles of nutrition. They had developed extraordinarily attractive and effective methods of classroom instruction, had established many contacts with pupils in addition to those at the

dental chair and had extended their influence into the homes and directed the conduct in homes to a degree never before attained by any health-teaching unit in Bridgeport. The activities by which this influence was making itself progressively effective were abolished by this decision. With this uplift taken away thousands of homes gradually fell back along the path of least resistance to the old ways of doing things, and the old way brought old results, unhygiene and less abounding health. There would be no children now going home with interesting rhymes to recite, perhaps by translation into a foreign language, or with exciting food-instruction games to play, no insistence on hard and whole grain foods with good reasons therefor cleverly told, no strengthening of childish wills to resist the lure of the candy shop. And by just so much as this instruction and moral support were removed the health of the children was left undefended.

The decision was a blow to the establishment of dentistry on its proper plane of community service, not only in Bridgeport but wherever the work in Bridgeport was known, and that was pretty much throughout the dental world. Dr. Fones had a great conception—that dentistry should be practiced continuously and constructively by each individual for himself, with the dentist as an occasional helper, and not be practiced principally by the dentist with the patient as an occasional helper. He was actually bringing that to pass among the school children of Bridgeport, so that probably for the first time in the history of any American city, about 30% of the newcomers to the first grade had sound teeth, clean mouths and healthy gums. Those children had never been under his instruction before. They had not directly cost the city a cent for this form of education. The hygienists had reached through the homes to the preschool children, and these already had some health education and its benefits. It is obviously impossible to reach such children to any such extent by chair-service, which is all that is legally possible to the Board of Health in the schools.

Let us apply this achievement for a moment to our own work. If dentistry is ever to reach its proper stature as a profession, it must be through some such conception as Fones here translated into action. We must educate people to practice dentistry daily for themselves, with our help at intervals. They must practice it by the proper eating of proper food, by exercise that will oxidize what they eat, and by general hygiene and oral hygiene. I know of a few families where efforts are made to carry out this plan. The children are growing up with sound dentitions, and the adults enjoy a degree of oral health unknown to them for many years.

To all who dream this dream for humanity Bridgeport was as a city set on a hill. Its influence extended throughout the earth. In far-away New Zealand, for instance, observers who had visited Bridgeport instituted a far-reaching system of oral hygiene, for much of which the Bridgeport work was the inspiration.

That Dr. Fones's conception of the importance of the teaching activities of

the dental hygienists was not mistaken is shown by the following quotation from an article in *The Journal of Dental Research* for April, 1928, by C. J. Hollister, D.D.S., who is probably one of the best-informed men in America on this subject:

"Education is the fundamental principle of prevention in dentistry. . . . The State Department of Health of Pennsylvania has for quite a number of years been doing everything in its power to induce local school boards to employ dental hygienists to do practical prophylaxis and teach the children fundamentally what to eat and how to eat it and to stimulate interest in the proper use of the toothbrush. . . . She (the hygienist) is the teacher of how, why and when of the toothbrush, also fundamentally of nutrition. . . . There is something far more fundamental than merely cleaning teeth, and that is what we eat and how we eat it. . . . It is my firm belief that if the nutrition of the expectant mother from the time of conception to birth could be supervised and her diet also controlled during the nursing period, and if the child's diet were under strict supervision until he attained the age of twelve, he would be assured of an almost perfect set of teeth throughout life."

And then Dr. Hollister closes with these conclusions:

"The Department of Health under which I serve was convinced of the logic of the plan pursued by Dr. A. C. Fones, of Bridgeport, Conn., and that is the reason for the existence of the Division I represent in that Department. Most of you are personally acquainted with Dr. Fones and are familiar with the findings made public in his pamphlet called 'The Bridgeport Five Year Report!' Some of you have, no doubt, investigated and have verified claims of results made by Dr. Fones in Bridgeport, and I am sure that the profession throughout the country accepts his claims as reasonable. Such being the case, I want to say, with all the force at my command and backed up by the actual facts, that in Pennsylvania we have over one hundred and thirty-five communities which in varying degree are absolute confirmation of the results of the Bridgeport plan. In other words, we have over one hundred and thirty-five little Bridgeports in Pennsylvania. Those that have had this service four years or more would be able to give percentage results uncannily close to those presented by Dr. Fones."

This decision by the Board of Education was a blow to the physical education which the practical people in the schools were carrying out. When they began their real campaign in September, 1920, they had rejoiced to find at hand a group of trained teachers ready to take up important parts of the instruction. It is a striking commentary on this situation that at that time the nurses who largely represented the Board of Health in the schools were far less well qualified to give physical instruction in the classrooms than were the dental hygienists. The Board of Health cannot legally give classroom instruction, and from the time the dental clinic was returned to the Board

of Health the hygienists were limited to the practice of dental hygiene.

The number of hygienists has been reduced from 26 to 10, and the appropriation is now $15,000 as compared with about $42,000 under the Board of Education. The expenditures for this form of health education are obviously $27,000 less annually than they were, and it might be thought that the city is saving much money, but it is in the highest degree probable that any one who cared to study the whole matter carefully enough could show that the abolition of the instruction in the classrooms by the hygienists will eventually cause an aggregate loss to the children and to Bridgeport of much more than $27,000 and losses in health for which money is no proper measure.

It seems extremely regrettable that there should rise to power in any board of education any persons who, confronted by a great opportunity and in the face of remarkable achievements in improving the health of the children, can be of such little vision or so devoid of vision that they are willing to abolish the activities which have done most to make those achievements possible. If they do rise to power, any community which has had the benefit of a clear-cut demonstration as to what can be done should not allow them to remain there.

Of the thousands of children who received the full benefits of the school dental clinic in Bridgeport, as it was conducted at its best, many must now be voters and some are undoubtedly of political eminence. It seems strange that, mindful of the fact that they have or will have families and that they desire for their own children the most beneficial of health services, they do not rise up and say that the Board of Education shall again render to all school children the kind of service which they received and by which they so greatly benefited.

The political waters seem to be calm over the spot where the most brilliant educational effort for child health that had ever been made up to that time in an American school system went down.

Bridgeport sends its wares throughout the world, and buyers and sellers come and go. But those who came from the uttermost parts to see the great new adventure in human welfare, who saw, who were conquered and went back to inspire home folks to do something similar, come no more. This lamp of inspiration now burns brighter elsewhere than in the city where it was lighted.

Bridgeport might still win back much of her former glory. Her dental hygienists might become again economists of human raw material, great potential sources of wealth.

How true are the words of the ancient sage, "Where there is no vision the people perish."

Some Facts Concerning Orthodontia

By RAPHAEL J. MOOLTEN, D.D.S., New York, N. Y.

1. When teeth occupy irregular positions, especially where they are crowded and congested, the liability to decay is correspondingly increased. Dental floss or the toothbrush cannot reach and remove the particles of food that lodge between the teeth. In such cases, if the condition is not corrected, the teeth decay and continue to decay, in spite of the most faithful efforts of the dentist, until they are finally lost. Correct facial expression is very important and so is perfect and distinct enunciation; but, because of the danger of losing the teeth through caries when their malposition favors caries, particular attention should be given to the correction of the teeth.

2. In cases of toothache, abscesses in the gum or swollen jaws, the child is irritable and cannot pay attention to school work. There is no greater and more serious annoyance when there is malocclusion and the teeth are congested, but when the child suffers from an abnormal articulation of the jaws, due perhaps to adenoids or enlarged tonsils, there is constant irritation and consequent development of various nervous troubles. It is quite possible that many nervous disorders of childhood originate in faulty articulation. In many cases the symptoms of high nervous tension have disappeared when irregularly placed teeth have been put in their proper positions.

3. As one of the principal functions of the teeth is *mastication,* and since all the teeth are needed to perform this work satisfactorily, it naturally follows that any interference with this function through the irregular position of the teeth and jaws must be detrimental to the individual and may result in partial or complete *loss of health.* The overtaxing of the digestive system by improper mastication should be an incentive to the correction of irregularity.

4. An appearance marred by irregularity of the teeth is the reason that generally induces the patient to apply for remedy, whereas other more important internal derangements in the mouth are probably disregarded. These other evils may not be recognized even by the parents, but the *bad appearance* of the child attracts their attention and enlists their sympathy to the extent of having the deformity corrected. For irregular teeth are truly a deformity, much the same as a crooked spine or baldness, but, like baldness, irregularity of the teeth is so common that it is usually disregarded. However, unlike other deformities, irregularity of the teeth can be corrected very easily. It is an injustice to any child to let him go through life with the handicap of a stunted mouth development.

The "beaver age," the age of brush whiskers and drooping mustaches, is passing. People are now required to present an open, undisguised facial appearance. There can be no hiding of a weak chin by a strong beard. Now the issue must be met.

When we speak of a "weak chin"

Fig. 1
A case of superior protrusion.

(Fig. 1), which is by no means common, we imply what dentists call superior protrusion or, in ordinary language, an upper jaw that protrudes over the lower jaw. This is caused in many instances in childhood by thumb-sucking and is due also to mouth-breathing caused by adenoids or enlarged tonsils. It may even be inherited. It may tend toward tuberculosis and other lung conditions, and naturally, by weakening the *constitution,* it often tends to weaken the character. All this can be prevented.

The form and shape of the mouth, being such an important element in beauty, very often determine whether he or she will succeed in business by reason of a pleasing appearance, whether he or she will contract a suitable and happy marriage, etc. A good set of teeth is a very valuable dowry.

Fig. 2
A case of inferior protrusion.

5. A "bulldog" lower protrusion (Fig. 2), consisting of the abnormal protrusion of the lower teeth and jaw, is very frequently encountered. This deformity is not only unsightly, but interferes seriously with mastication. Even the occlusion of artificial teeth will not lessen nor check its tendency. In many cases it is undoubtedly a family inheritance, while in others it may be brought about by local conditions.

6. The V-shaped or saddled-shaped arch occurs in many cases from the pressure of the cheeks upon the sides of the arch while sleeping with the mouth open and breathing improperly

through the nose. It may be due to hereditary causes or to specific diseases, where the walls of the nose are congested and the space between them restricted. Such an arch keeps the mouth slightly open all the time, and the patient is known as a *mouth-breather* (Fig. 3).

It has been discovered that mouth-breathing is a very significant factor in causing bronchial infections. Cold, raw air, unpurified and unwarmed by not passing through the nose, induces congestion, inflammation and infection of the lungs; and while we have no definite statistical data, we are at liberty to believe that mouth-breathing renders a person much more susceptible to tuberculosis. The catarrh about the pharyngeal end of the Eustachian tubes, which is caused by mouth-breathing, may be one of the most common causes of hopeless deafness in middle life.

Stammering and stuttering are relieved by correcting an inferior protrusion or "bulldog" jaw, and sometimes in cases of superior protrusion.

In business the above-mentioned deformities are detrimental to the success of a salesman or the representative of a concern. The prospective customer often looks at the person with sympathy or disgust and in so embarrassing a manner as to prove a painful annoyance to both speaker and listener.

With a V-shaped or saddle-shaped arch the air space above the tongue is considerably less than normal, consequently the voice is thin and flat, lacking in that resonance and quality which distinguishes a good from a poor speaker, a good singer from a poor one. Moreover, the tongue has less room in which to move, and certain consonants are pronounced indistinctly or not at all. We may therefore have lisping. A V-shaped arch and protrusions of the teeth and jaws almost automatically bar a person who may possess all other necessary qualifications and ambitions from becoming a good actor, singer or public speaker.

In the case of an articulation where the teeth of one jaw bite into the gum of the other jaw, there are produced a

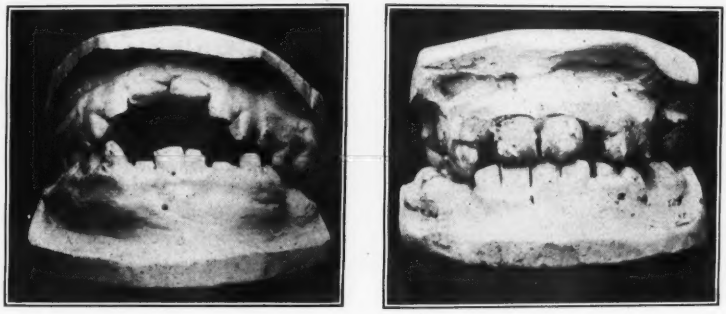


Fig. 3
A case of mouth-breathing before and after correction.

sensitiveness and an irritation in that part of the gums which later may lead to pyorrhea or cancer. Moreover, the friction along the sides of the teeth may cause them to become very sensitive.

7. Causes of irregularity may be divided into two groups:

A. Based upon the *time* in which the factor occurs.
   (1) Inherited.
   (2) Congenital.
   (3) Acquired.

B. Based upon the *manner* of occurrence.
   (1) General, also called constitutional.
   (2) Local.

General Causes of Irregularity

(*a*) *Children's diseases* with a high temperature — for example, chicken-pox, measles, scarlet fever, etc.—will cause destruction to the enamel tissue and very often the structure of the entire tooth, causing its loss.

(*b*) *Rickets* and *scurvy* are two of the greatest causes of malocclusion. According to statistics by Dr. Alfred Hess, 75% of children in temperate zones have rickets at some time or other in life, though frequently so transitory that the effects are apparent only by an x-ray examination of the bones. This occurs usually at about the age of six months. It is due to two things, lack of direct sunlight (short ultra-violet rays) and lack of proper nutrition (foods which are poor in calcium salts and necessary vitamins).

Rickets has been described as a disease of childhood, but it also makes its appearance in the middle-aged. Many cases have been reported in pregnant women and in nursing mothers. When the mother has rickets, the teeth of the child will be doubly affected.

With rickets the temporary teeth erupt *late,* and the conditions with regard to malocclusion are made worse, owing to the fact that the temporary teeth are lost early. The roots are absorbed without any apparent reason. The permanent teeth erupt late, and if the disease is marked, owing to deformed jaws and processes, they take extreme positions of malocclusion.

Rickets is a disease of malnutrition characterized by faulty bone formation. The teeth, being supported by a faultily calcified alveolar process, have not enough support to prevent them from assuming a position of malocclusion under the stress of mastication.

Rickets is found in the two extremes of society—the rich and the poor. The middle class, who have sufficient of the coarser foods and are able to live in good surroundings, are mostly free from rickets. Patients who have rickets are prone to be mouth-breathers and to suffer from enlarged tonsils and adenoids.

(*c*) *Tuberculosis* is an indirect cause of malocclusion. In children it produces conditions that affect the teeth, but the results are almost directly the opposite of those produced by rickets. The temporary and permanent teeth in the child suffering from tuberculosis will erupt *early,* while the absorption of the roots of the temporary teeth, in order to make room for the permanent, is prolonged. Hence the permanent tooth will take a position somewhere on the side of the temporary.

(*d*) *Syphilis* has long been considered as a disease that produces atrophy of the enamel organ, and there is little doubt that it does produce certain erosions on the tops of the teeth which are called *crowns* and are referred to as *Hutchinson's teeth.*

In some cases the disturbance may cause the destruction of the tooth-germ entirely, which would cause malocclusion through "missing teeth."

(*e*) *Intermarriage of races* which have very different racial characteristics may result in malocclusion.

(*f*) *An inherited condition* is one that is present in the parent and transmitted to the offspring. Protrusion of the upper or the lower teeth is very often called a *family trait.* Such conditions are not the result of the transmission of the malocclusion, but the result of environmental conditions that are the same for each individual of the family.

(*g*) *Congenital conditions* are those that occur in the embryo before birth, such as *harelip* and *cleft palate.* It has been decided by many authorities that the latter cases occur in the first-born children, and very seldom are these conditions found in children born afterward. The opinion of many writers differs on the cause of harelip and cleft palate, but it is accepted by the majority of the modern authors that such conditions are due simply to improper union of the premaxillae with the maxillary bud, which exist in all individuals at some time in the embryonic life. Volumes upon volumes are printed on this subject, and those who are interested can easily find them in books on embryology.

(*h*) *Supernumerary and missing teeth.* The supernumerary tooth-germ is present before birth, and in the majority of missing teeth the germs are absent at birth. Missing teeth are due mostly to children's diseases that have a high temperature as already mentioned, and also to accidents.

(*i*) *A large or oversized tongue* is also a congenital condition. The oversized tongue has a tendency to spread the anterior teeth and causes a protrusion.

(*j*) *Ductless glands.* Another factor that plays a part in the development of malocclusion is disease of the ductless glands, of which very little is known.

It is accepted that the diseases of the pituitary body (a small reddish-gray vascular body, weighing about 10 grains, contained within the Sella Turcica of the sphenoid bone, which consists of two portions, the anterior and posterior) have a tendency to produce an overdevelopment of the growth of the bones of the body and the face to a certain extent. But the overdevelopment of the *lower jaw* is more apparent, because in the development of that bone we have the malocclusion produced directly. It is called a macro-mandibular development or acromegaly.

Diseases of the thyroid gland will produce a lack of development of bony structure, and most of them affect children who are suffering from thyroid deficiency.

(*k*) *Abnormal development and attachment of the frenum labium,* (a fold of mucous membrane that checks or limits the movements of the lips), is

congenital, although in a great many cases this condition does not assert itself until some time after birth. The frenum may be abnormal in the upper or lower lip, but is chiefly found in the upper lip. With the abnormal frenum may be a thickened and abnormal lip, which produces a very bad facial deformity.

LOCAL CAUSES OF IRREGULARITY

(*a*) The bad habits which young children are apt to acquire after they are weaned, such as thumb-sucking, lip- and tongue-sucking, the use of

Fig. 4
A posture causing malocclusion.

nipples, rubber rings, pacifiers, etc., are serious factors in bringing about an irregular alignment of the teeth in one or more portions of the arch. The constant pressure of the hand against the face (Fig. 4), habits such as pillowing the head upon an arm or hand when studying or when tired from school work, and nervous habits such as lip-bitting or nail-biting will cause a serious malocclusion.

(*b*) Very often associated with general or constitutional origin are adenoids, inflamed tonsils, delayed eruption, nasal obstruction, abscesses, pyorrhea and other diseases of the jaws and tissues.

(*c*) Accidents, early extraction and loss of temporary teeth and also of permanent teeth due to faulty dental work or neglect by the patient, delayed extraction of temporary teeth, sore teeth, improper restorations such as poorly fitting crowns and faulty bridgework, etc. This is only an incomplete catalog of evils attending the faulty arrangements of malocclusion of teeth.

8. Many years of attention to this subject, aided by an extensive experience, have firmly convinced me that prudence and wisdom alike dictate early interference in cases of irregularity. In the majority of cases where the temporary teeth are irregular, they indicate the repetition of the same conditions in the permanent teeth of the adult. It is agreed among leading orthodontists that it is best to begin with a child when he reaches the third year and have the teeth and arches of the jaws carefully examined to determine whether the teeth are healthy and the arches correct. A dentist who is competent to treat children's teeth should be consulted. Small cavities should be filled and stains removed. Whenever the arches of a child are

irregular or the teeth malpositioned, a dentist should be consulted who is qualified to take care of this work and a careful scrutiny of the mouth conditions should be made at short intervals. It often happens that between the ages of four and six, and perhaps prior to that (oftener than is generally suspected), a crowded condition of temporary incisors without spacing indicates a future irregularity. Many dentists who have never made a study of orthodontia advise the parents to delay orthodontic treatment, saying that the teeth will straighten out by themselves, with the result that a progressive abnormal condition develops. The parents are forced to consult an orthodontist after a while and consequently the reputation of the dentist is injured.

Pay no attention to laymen or physicians or even to dentists who make such remarks as these: "Suppose the child's teeth are slightly irregular? The child will grow out of it. Nature will take care of that condition. Wait until *all* the teeth come in—then is the time to correct them." Emphatically *NO!* Neither will they "grow out of it" nor will *nature* correct them. They will grow worse! It will be only that much harder for the orthodontist and for the patient later on.

I cannot emphasize the fact strongly enough that all irregular conditions should be taken care of as early as possible. Many a child with a limp, loose mouth, readily susceptible to earaches and snuffles, could have been saved for a happier childhood and for a longer and healthier manhood.

9. Today, when the science of dentistry has reached a degree of development hitherto undreamed of, there is little to be feared in the way of inability to correct almost any abnormal condition in the mouth, and with no restriction as to the age of the patient.

As I mentioned before, in all cases where orthodontic interference is advisable it should be undertaken at a very early age, when that is possible. But there are many *adults* for whom such service was not rendered in childhood, perhaps because of lack of funds or failure of the parents to appreciate the importance of correction or because the family dentist advised delay.

Many dentists are doing a serious injustice to adults who suffer socially, commercially or personally on account of the irregularities of the teeth, when they tell such patients that the condition cannot be corrected because of the patient's age. About 40% of my patients are adults from 26 to 55 years of age.

In spite of the generally accepted statements to the contrary, I do not find it particularly difficult to realign the teeth for such patients without causing death of the pulp, discoloration of the teeth, periodontoclasia or antrum or sinus trouble, with the exception of cases where the conditions of the gums and tissues in the mouth are inflamed or broken down by a local or constitutional disease. Naturally, the principal elements in successful orthodontia for adults are caution, common sense and practical experience on the part of the dentist.

The dentist who is to undertake the work should thoroughly familiarize himself with the details of the case by

careful questioning of the patient. He must ascertain whether there is any antrum or sinus trouble or a fracture or a dislocation or any other systemic disturbance. The answers to these questions and the results of his own observations are necessary in order to enable him to judge what appliance to use and what degree of force he may apply so as to do satisfactory work with little disturbance to any of the parts or perhaps not to undertake that case at all.

It is hardly possible to overestimate the importance of a pleasing appearance to a great number of adults from the social, professional, commercial or personal point of view. If it is within our power, as dentists, to restore a personal appearance which will enable some one to keep a desirable position or enjoy social relations or have the satisfaction which comes from appearing well, it is our professional duty either to restore the appearance or, if we do not care to undertake the work ourselves, to refer such persons to some one who can render the necessary service.

For reasons which are generally well understood, correction of the relations of the dental arches is very important to health, especially to the protection of the pulmonary passages. The correction is important from the point of view of mastication, because the efforts to masticate made by many adults with malposed teeth or deformed jaws increase the malposition and the deformity. Such mastication, even if satisfactory to the patient, is recognized by dentists as so inefficient as to permit serious impairment of the health. For many patients the teeth can be arranged in such way that the masticating efficiency will be greatly increased and the general systemic resistance will be raised. It is an established fact now that malocclusion is a major factor in pyorrhea, and a number of cases have been cured by orthodontia. I have been able to complete the correction of teeth of over 75 adult cases in the past sixteen years since I commenced to treat these cases.

10. Since dentistry goes hand in hand so closely with medicine, this paper should interest the physician as well as the dentist. The practice of dentistry, keeping in step with the general revolution in medical science, has evolved from a mechanical practice, which formerly confined itself to filling teeth, extractions and restorations, to a higher and more refined technic of the study of pathological changes in the teeth and oral structures and the investigation of their interrelationship with pathological changes in other organs. The family doctor is realizing at this time the importance of consulting the family dentist. The former is convinced by now that impacted or unerupted teeth frequently give rise to neuralgia and nervous disorders, but he should familiarize himself with the important part *orthodontia* is playing and he will learn to his advantage that irregular and malposed teeth are the root of evil in many cases. The medical man, if he is anxious to do the right thing for his patients, should lay particular stress upon the condition of the oral cavity first and consult a competent dentist when he finds it necessary.

119 West 57th Street.

Oral Surgery In Practice

By JAMES L. ZEMSKY, D.D.S., New York, N. Y.

Attending Surgeon, Department of Oral Surgery; Chief of Clinic and Director, Surgical Periodontia Department, Midtown Hospital, New York

(*Continued from December*)

COMPLICATIONS AND ACCIDENTS DUE TO INJECTIONS FOR LOCAL ANESTHESIA

¶306. Breaking of hyperdermic needles during the administration of conduction or infiltration anesthesia causes much anxiety to both patient and operator. This anxiety may be reduced to a minimum if the proper technic is used, and if the possibility of such accidents is borne in mind by the operator. (See ¶88, 92-97, 102-104; also, Figs. 105-107, 341-347.)

Fig. 341

BROKEN NEEDLES

Roentgenogram taken intra-orally in the region of the maxillary centrals, lateral and canine. It shows a broken needle in the area of the lateral incisor. The accident occurred during an infra-orbital injection.

¶307. While the removal of a broken hyperdermic needle may be a simple procedure under certain conditions, generally speaking it is a difficult surgical operation, and unless the operator is confident of being able to carry it out successfully, it is best not to tamper with it.

¶308. In searching for a broken hyperdermic needle the incision should be made perpendicular to its long axis. *Cutting* of the structures is not advisable; instead the tissues should be carefully "teased" apart and the search should be as systematic as possible. Every nook and corner must be explored. Roentgenograms taken in different positions are of inestimable value. (See Figs. 346-347.)

Fig. 342

Roentgenogram of the region of the left mandibular premolars. This reveals the presence of a fragment of a needle near the apical region of the first premolar. A short needle was used for infiltration anesthesia and was broken during injection. The fragment was lying freely between the bone and the periosteum.

¶309. Hematoma, due to the ex-

Fig. 343

Roentgenogram of a head taken in a lateral position. It discloses a broken needle lying above the roots of the maxillary second and third molars. A long, thin, steel needle was used for a tuberosity injection and snapped while the solution was being deposited in the tissues.

Fig. 344

SWELLING—BROKEN NEEDLES

Photograph of a patient with a swelling of the left side of the face, who complained of difficulty in opening the mouth following an injection given for extraction of a tooth. (See ¶88, 92-97, 102-104, 306.)

travasation of blood into the surrounding tissue, when caused by puncture of a blood-vessel during injection, usually disappears in a few days. Warm applications and massage hasten its disappearance. Very rarely, if ever, do serious complications follow.

¶310. Pain due to infection caused by the use of contaminated solutions, non-sterile hyperdermic needles or the introduction of bacteria from the oral structure and saliva can be controlled by the administration of such drugs as pyramidon in 5-grain doses every two hours, allonal in 3-grain doses every two hours, or morphine sulphate in ⅛-grain doses. If the presence of pus is anticipated, incision and drainage are indicated. When swelling occurs, it should be treated by cold applications.

¶311. Shock should be treated by placing the patient in a horizontal posi-

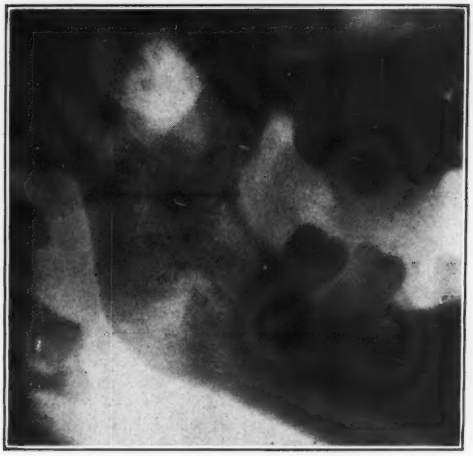


Fig. 345

Roentgenogram of the mandible of the patient shown in Fig. 344. This reveals a broken needle lying across the ramus. The patient was subsequently operated upon and the needle removed. Not every needle that it is attempted to remove, however, is removed. There are a number of patients who have been operated upon in vain for removal of broken needles, therefore the greatest care should be exercised to *prevent* such accidents. (See ¶88, 92-97, 102-104, 306-307, 312, 315.)

Fig. 346

Roentgenogram of a head taken in an antero-posterior position. This shows the position of a broken needle lying almost flat against the inner surface of the ramus. It is absolutely essential to secure such a picture together with the lateral view before an attempt is made to remove a needle. (See Fig. 347; also, ¶308, 312.)

Fig. 347

REMOVAL OF BROKEN NEEDLES

Roentgenogram taken in a lateral position showing a broken needle lying high up near the coronoid process of the ramus, a position not usual in cases of needles snapped during the administration of a mandibular injection. In attempting to remove it a vertical incision should be made, the tissues separated, and an up-and-down movement with the dissecting instrument used. (See Figs. 345-346; also, ¶308, 312.)

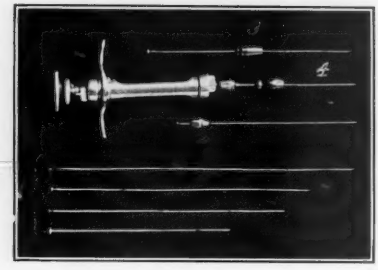


Fig. 348

PATHFINDERS

Photograph of pathfinders (1), which facilitate the search for broken needles. These instruments are merely steel wires of different lengths and are shaped like injecting needles. They are used mounted on a syringe (4). The pathfinder is inserted into the soft tissues near the point where the broken needle is expected to lie, and, after it has been fixed in this position, roentgenograms are taken. The pathfinder serves as a director in determining the line of the initial incision as well as in indicating the path to be followed in approaching the broken needle.

It is needless to emphasize here that both exploring calipers and pathfinders are merely aids employed in connection with roentgenograms. An attempt to use these instruments without very carefully taken roentgenograms will prove absolutely futile.

At 2, the pathfinder and hub are seen. At 3, a clip is shown, which is necessary to make secure the position of the pathfinder. The pathfinder with clip mounted on a syringe is shown at 4. (See ¶315; also, Fig. 352.)

Fig. 349

Roentgenogram of a mandible showing a broken needle. This x-ray is taken in the usual way. When the exploring calipers are to be used, a projection of the needle upon the side of the face is necessary. This will require placing pieces of metal upon the cheek and taking the picture so that the right and left sides of the jaws superimpose and coincide. (See Fig. 350.)

Fig. 350

Roentgenogram of the same patient as in Fig. 349. This shows the needle (1) and the metal markers (2 and 3). A paper tracing is made of such roentgenograms, the areas shown to be occupied by the markers (2 and 3) and the needle (1) are cut out and the tracing placed over the marks (2 and 3) on the face. Then the position of the slit indicating the position of the needle is marked on the face. This is the projection of the needle. (See Figs. 351-353; also, ¶315.)

tion so that the head is lower than the heart, aromatic spirits of ammonia should be inhaled, fresh air admitted and ice-bags applied to the forehead. The body should be kept warm and, when the pulse is weak, 1/30 grain of strychnine should be administered.

¶312. Under no circumstances

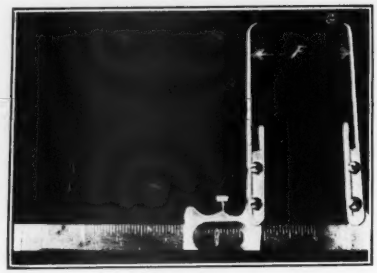


Fig. 351

EXPLORING CALIPERS

Photograph of an instrument which is a modification of an ordinary pair of calipers and consists of two extension arms (A and B) attached to a cross-bar (C). One of these extension arms (A), which is the guide, is fixed stationary to the cross-bar (C), while the other arm (B), known as the explorer, is movable and slides along the bar (C). When desired, the explorer may be firmly fixed to the bar by tightening the set-screw (D). By moving the explorer to the right or left the space between it and the guide (F) may be either increased or diminished. Both the guide and the explorer are attached to the frame of the instrument by means of four thumbscrews (E). Besides permitting further adjustment of the extension arms, these thumbscrews make possible their complete replacing when such a change is necessary.

When this instrument is in use, the extension arm (A), the guide, is placed with its point (G) on the patient's face so that it touches the mark which is a projection of the needle upon the skin. (See Fig. 353.) This being a projection of the needle, its true position is thus clearly seen.

Sufficient separation of the two extension arms permits the insertion of the explorer into the mouth, while the guide rests on the face (Fig. 353). When the point of the explorer is inserted into the intra-oral incision, the horizontal plane occupied by it definitely determines the horizontal plane in which the needle is situated. By moving the extension arms along the cross-bar *the plane in which the needle lies* can be explored. (See Figs. 348-353; also, ¶315.)

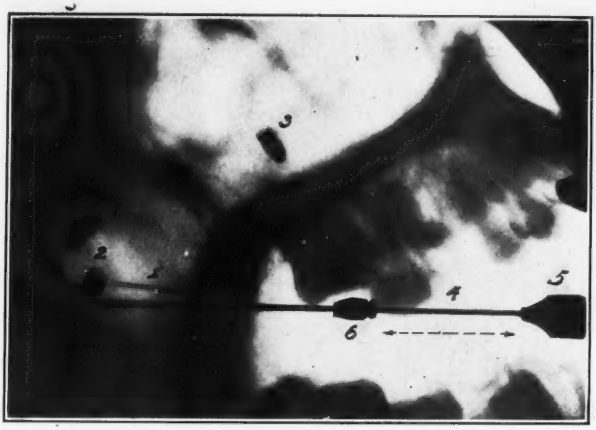


Fig. 352

Roentgenogram showing a broken needle (1), metal markers (2 and 3), and the pathfinder (4), which may be dismounted from the syringe by turning the hub (5). By moving the pathfinder in and out in the direction indicated by the arrows, its extreme end may be brought close to the extreme posterior end of the broken needle. This position of the pathfinder is then fixed by moving the clip (6) until it comes in contact with the tissues. After this is set, any change in position of the pathfinder is easily detected. (See Figs. 348-353; also, ¶315.)

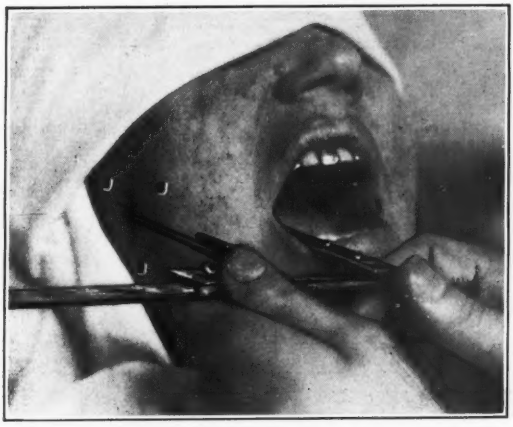


Fig. 353

Photograph of a patient showing the metal markers, as well as the projection of the needle upon the face. This illustration demonstrates the use of the exploring calipers (Fig. 351). The point of the guide arm is placed over the line which is a projection of the needle. While the exploring arm is inserted into the incision made along the side of the pathfinder lying in a horizontal plane with the needle (Fig. 352), by moving this arm to the right or left the horizontal plane in which the broken needle lies is explored. (See Figs. 348-353; also, ¶315.)

should one attempt to remove a broken needle without having roentgenograms of it in at least anteroposterior and lateral views. While these are being taken, the mouth must be kept as wide open as possible. (See Figs. 345-347.)

¶313. Intramuscular, subcutaneous or intravenous injections of alpha-lobelin are indicated in case of collapse or shock, when a resuscitant is required, particularly where *artificial lung ventilation* and *oxygen inhalation* are not applicable or have failed. This drug is a direct respiratory stimulant that has proved successful.

¶314. When the circulation is feeble and instantaneous action is demanded, 1/20 grain of alpha-lobelin is injected intravenously. The dose for subcutaneous or intramuscular injection is 3/20 grain for adults and 1/20 grain for children. These injections must be made *slowly*.

¶315. Some aids may be advantageously employed in the operation for removing broken needles. These aids often facilitate the quite tedious task. (See Figs. 348-353.)

355 East 149th Street.

(To be continued)

[MEASUREMENT CONTROL]

I believe that measurement control of all instrumentation in a root canal is one of the most important factors in securing successful results. By measurement control we mean that as soon as possible after extirpating a pulp or otherwise entering a root canal, the operator should establish, by measurement wire and x-ray, the exact point in a tooth to which he wishes to go with his root filling, and all broaching or other instrumentation must be governed by that measurement.

—HALL.

Porcelain Manipulation

A PRACTICAL TECHNIC FOR THE GENERAL PRACTITIONER

By F. R. FELCHER, D.D.S., Chicago, Ill.

XXII

INLAY CONSTRUCTION

The die can best be handled if it is set in a holder built up of modeling compound with a pin embedded in it, so that when the carver is rubbed against the pin it will allow the porcelain to vibrate during application.

Have the slab perfectly clean and apply the necessary porcelain colors in their respective positions on the slab. Examine the matrix for defects and also to be sure that it can be removed from the die with ease.

Mix the porcelains with the palette knife and, when they are properly spatulated and the unnecessary water is drawn off, pick up a small quantity of the porcelain and place it in the matrix. Vibrate and touch the excess water with a clean absorbent cloth. Now add some porcelain, vibrate and remove the excess water, shaping with the carver until the matrix contains the necessary amount of porcelain.

Let us pause here for a few moments to analyze the action that is expected to take place during the firing of the porcelain, so that an attempt may be made to control some of the conditions that may interfere with the successful construction of the inlay.

First, let us consider the shrinkage of the porcelain body from the heating stage to the final vitrification. The porcelain is going to shrink during the early action of the heat, in what we will call the air shrinkage state. We are going to reduce the air shrinkage to a minimum by mechanically bringing the porcelain crystals into as close a mesh as possible (by vibration). That this occurs is proved by the water coming to the surface. When we remove this excess water, we maintain the closeness of the relation established and hold the air shrinkage to a minimum. The firing shrinkage, or the vitrifying process, will take place as usual, but there will be less shrinkage and a denser porcelain produced if the technic above is adhered to.

The next point to be considered is the binder. Our dental porcelains have binders such as starch, dextrine or sugar, which hold the mass while the case is being built. These binders separate easily on carving by being dropped or by the matrix being pulled over undercuts that might possibly be present in the die. We do not expect that the latter is present in perfect cavity preparations and impressions. Pulling the unfired porcelain with its matrix out of a die that has an undercut or offers great resistance to removal may separate the binder, which does not often show at the time of the removal of the build-up. Carving and not subsequently burnishing at that time or dropping the build-up from the fingers results in cracks after the work

is removed from the furnace. To prevent this, we must be sure that the matrix will come out of the die readily.

Another factor of importance is that porcelain shrinks toward its greatest bulk. It shrinks also toward high heat and toward the matrix. About 1917 the writer began to experiment with the use of longer platinum aprons beyond the shoulder and the periphery of the cavity margins. It was noticed that the larger aprons obviated the necessity of relief for shrinkage, provided no resistance was offered by the die. If resistance was present, it caused a compression of the porcelain and presented subsequent cracks.

There can be no question that porcelain is more beautiful, denser and stronger when fired at a lower temperature and over a longer period of time. Experimentation leads to the belief that by firing at a lower temperature the tendency of the porcelain to shrink toward heat is retarded and then it becomes reasonable that a large apron of platinum, considering that porcelain tends to shrink toward it, overcomes the pulling effect of the shrinkage toward the porcelain bulk.

Therefore, if we have an excessive amount of platinum and the matrix can be readily removed from the die, in small build-ups we can overfill the matrix by means of a good condensation procedure, so that after the biscuit-fire* the excess can be dressed with fine stones, disks, etc., then carefully washed and finally fired.

In larger inlays more firings may be necessary. Sometimes it is good policy to start with a high-fusing porcelain and fire to a very high biscuit-bake. Then apply the same color of medium-fusing porcelain, which, when time-fired, will fuse both the first and the second porcelains alike.

Fluxing of porcelains to the necessary or desired temperature will help in building to a final uniform vitrification, when it is properly handled.

After the inlay is finished, the platinum is removed and may then be etched by first painting the outside surface with wax and then touching the portion to come in contact with the tooth with a wood-point dipped in hydrofluoric acid, although equally good results will be obtained with a fine stone, and with less danger.

It must be remembered that the cement should be mixed so that the cement thickness will be equal to the thickness of the matrix used, if the inlay is to seat properly.

7616 Phillips Avenue.

* See chapter on *Firing*, THE DENTAL DIGEST, June, 1928.

Our Obligations to Our Patients*

By J. E. BANKS, Yakima, Washington

It is not the purpose of this paper to treat the subject of obligations exhaustively, for there are several kinds of obligations which the individual owes to society, and which might all be applied with equal force to the attitude of the dentist to his patient. To follow each of these would be to devote months of research to the various ramifications to which it would lead.

The term *obligation* implies more than duty, for there can be no duty without an obligation to make it apparent. An obligation signifies either a real or a tacit promise on the part of one person, community or nation to discharge some material or moral debt to another individual or commonwealth. There is, then, in the term *obligation* an implied debt which can be paid only by strict attention to duty, and while that debt may be outlawed through lapse of time, the obligation still remains and duty to fulfill that obligation still exists. In other words, the dentist is bound by all the rules of society to maintain an equipoise between an honorable creditor and a just, discriminating debtor.

There are, then, three phases of this subject: (1) the dentist owes something to the patient; (2) he is morally bound to pay that debt; and (3) there is an ever present duty to perform, which is imperative.

What do we owe our patients? First, and foremost among all the things which are justly expected of the dentist by his patient is *honesty*—honesty in our operations, never slighting for any reason anything we undertake and which our conscience and best judgment indicate to be right. Too many times do we catch ourselves, when confronted by difficulties, looking not for the best and most appropriate solution of them but the easiest one. This is induced largely from financial considerations, but often from sheer laziness. This is dishonesty in the long run, not only of the individual who practices it but of the whole profession. To be strictly honest, there can be nothing good enough which is the work of human hands. Too often do we say to patients when they complain of unsatisfactory conditions, "Oh, you will just have to get used to it," when, if we were honest with ourselves and them, we would remodel the whole thing on lines that we know would be an improvement. Dishonesty of this kind inculcates insincerity. Insincerity is the parent of deception, and deception rapidly compounds itself into slack and uncertain habits which rob the patient of what he rightly expects, and the obligation is not met.

Honesty should characterize the advice given to him who confidingly seeks it. We often fall short here because of a lack of consideration of all the conditions which exist and are induced by a habit of superficiality. How often do we advise our patients to pursue a certain course with a view

* Read before the Yakima Valley Dental Association.

of obtaining the best results, when a little later we find our advice to have been faulty! Our obligations demand that we right that wrong advice, but pride often prevents us, and the patient is not paid the debt due him.

In financial matters, too, honesty ought to be the mainspring of our actions. We are prone to graduate the charge for services, not by what such services are worth but by what can be obtained. A poor operation is often concealed by a charge entirely uncalled for by the service rendered, and again the obligation has been violated.

Also, we owe the patient a reasonable amount of skill; in fact, each one who entrusts his dental welfare to us is entitled to all the skill obtainable by study, exercise and experience. We owe it, therefore, to our patients not to while away our unoccupied hours in idleness and pleasure, but to make use of every available opportunity to improve the mind and train the hand to follow its dictates. To propose any plan for improving manual and mental dexterity by doing operations out of the mouth upon extracted teeth, etc., is not within the province of this paper, but such a procedure is evident to all who give the subject of obligation a moment's thought.

Skill is not alone confined to the mechanical part of the profession. It is as essential in application to the recognition of the personal peculiarities of those who present themselves to us for benefits as in the building of a glittering monument or the construction of an artificial denture. It is as necessary in the adaptation of the proper therapeutic remedies to pathological conditions as in adjusting a regulating appliance or filling the buccal roots of a molar. Skill is one of our obligations.

Courtesy is another of the elements which enter into this contract. Courteous behavior, demeanor and address, affable manners and gentle language are due to the patient on all occasions, not only in the privacy of the office and the home but in society at large. A constant study of one's own peculiarities to brusqueness and coarseness is indicated, for the term *profession,* by which we justly style our calling, is a guarantee of all that goes to make up courtesy. It is an obligation.

Cleanliness, too, is due our patrons, not only as a means to produce the best final results, which are always obligations, but primarily because it is due the patient to keep person and surroundings scrupulously clean so that his senses may not be shocked. Clean instruments, clean hands, clean offices, clean clothing and plenty of clean linen are all necessary for the welfare of the patient, and it is our duty to attend to each thoroughly and in detail.

Beauty, as far as possible, is another obligation. It is not sufficient that an artificial denture can be made serviceable enough to masticate upon, for, while duty is obligatory upon us, beauty comes in for its share of responsibility. The filling which preserves the tooth should be made as nearly like the beautiful curves provided by nature as possible, and the denture should restore the facial contour and be assimilated in color and shape with the temperament and complexion of the wearer so that an harmonious and beautiful result

may be obtained. Flowers, beautiful pictures and tasteful decorations are not alone luxuries—they are obligations due his clientele from the dentist.

We have said that the dentist is morally bound to pay the debts which we have just enumerated. The public gives the dentist confidence, pecuniary reward and honor proportionately as he fulfills his part of the moral contract to which he bound himself when he announced himself to the community as master of his profession.

This is not a material debt which can be settled by the payment of a few dollars, but it has a deeper significance and implies a moral obligation which can be met only by the highest attainments. When the dentist hangs out his sign, he guarantees to those who choose to patronize him that he realizes the fullest extent of his obligations to them. In other words, he promises to give them, in return for their confidence, respect and a pecuniary consideration, his highest ability and his best judgment.

He has given his word, which is more to be valued than much riches, and he is small indeed who does not realize the importance of the step. As one is morally bound to keep a promise given in good faith to a neighbor, so is the dentist obligated to fulfill every real or implied convenant with the public. This leads to the question of duty to be performed.

Duty is the embryo of all action. Without a sense of duty there could have been no philosophy, no art, no science. Without duty performed, the lightning might never have been harnessed. In fact, duty is the parent of progress, and consequently of dentistry. With every obligation there is an implied duty, so that the dentist, having an obligation to fulfill during every moment of his daily work, must ever have duty present. Duty compels mankind to do many distasteful and disagreeable tasks as well as pleasant ones, and so in dentistry there are the difficult and unpleasant things to be done to carry out obligations. Above all things, our duty is self-inspection, for did each of us take a mental survey of ourselves daily and consider our attitude toward our patients and the part we take in acting our part of the mutual obligation, we could find ourselves many times in error and the patient not given that which was due him.

Our obligations are mainly moral obligations. Their fulfillment is essential to true manhood, and the sense of duty which prompts us to perform them is the same which inspired the muse of Robert Burns and made him say,

> Oh wad some power the giftie
> gie us
> To see oursel's as others see
> us!

Periodontia*

By ARTHUR H. MERRITT, D.D.S., New York, N. Y.

Early Symptoms of Periodontal Lesions

The first clinical signs are usually seen in the gingivae. These may be any or all of the following: redness, swelling, recession, bleeding, sensitiveness, etc.; indeed, any departure from the normally healthy gingivae most often seen in childhood. When in the examination of the mouth any of these symptoms are found to be present, a most careful examination should be made to determine its cause, and such treatment undertaken as may be necessary to eradicate it. The health of the gingivae should be the first concern of the dentist. They represent the gateway to the periodontal tissue; to maintain them in health is to close the door effectively to a group of lesions which not only cause tooth loss, but may seriously impair the health.

Common Periodontal Lesions

These are gum recession, ulatrophia gingivitis, Vincent's infection and periodontoclasia. All may be present in the mouth at one and the same time. Indeed, it is usual in cases of periodontoclasia to find gum recession and gingivitis associated with it. Vincent's infection in the subacute form may also be present.

Gum Recession. There are at least three distinct clinical types:

(1) Atrophic: Characterized by gingival recession more or less uniform around the teeth and generally involving most of those in the mouth.

(2) Abrasive: Limited as a rule to the bucco-labial surfaces of the teeth and caused almost entirely by the improper use of toothbrush and dentifrices. In its uncomplicated form there is no clinical inflammation and no pocket.

(3) Inflammatory: Indicative of disease in the tissues of the periodontium, by which it is caused.

Treatment of gum recession naturally depends upon correct diagnosis. This is not always easy, as all three types may exist in the mouth at the same time.

Gingivitis. As its name implies, this is an inflammation of the gingivae and is caused by some irritant, bacterial, chemical or mechanical. It is nature's danger-signal and should always be given the most careful consideration. There are few adults in which it is not present to some extent. Nothing in the whole range of dental practice is of more importance than its early recognition and correction. Its most common cause is bad hygiene with its accompanying increase in bacteria and their toxins, plus mechanical irritants such as food impaction and defective restorations. Treatment consists in removing cause and restoring function.

Vincent's Infection. This is a highly infectious disease, usually involving the gingivae and caused by the Vincent organisms. There are two distinct types of the disease, one acute, the other chronic or subacute. The first

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is characterized by symptoms so striking as not to be mistaken, such as gingival slough, pain, hemorrhage, odor, prostration, temperature, etc. In the subacute type, however, the symtoms are less marked and diagnosis more difficult. Slight sensitiveness, bleeding of the gingivae and occasionally complaint of bad taste are the usual subjective symptoms. Examination reveals the fact that certain of the gingivae are highly inflamed, and that they bleed on the slightest provocation. Others in the mouth may be entirely free from symptoms. When diagnosis is uncertain, smears should be taken. In the absence of any symptoms, however, the presence in the mouth of Vincent's organisms, cannot be regarded as diagnostic.

Treatment of both types is the same, viz.: the establishment of a high standard of mouth hygiene and the use in the mouth of an oxidizing agent. The application to the gingivae of 5% chromic acid, plus the use of the following mouth-wash, has given excellent results:

Hydrogen dioxid aquae,	Ounces VIII
Mercury Bichloride	Grains II

Sig: Two teaspoonfuls in half-glass of water and use as mouth-wash several times daily.

A mouth-wash of one teaspoonful of sodium perborate to a glass of warm water is also helpful and by some regarded as almost a specific. As reinfection frequently occurs, the regular use of the following tooth powder will act as an efficient preventive.

Sodium perborate	Drams VI
Calcium carbonate precip.	Drams II
Pulv. Castile soap	Grains XXX
Saccharin	Grain I
Oil Wintergreen	Drops X
Oil Peppermint	Drops I

Sig: Use twice daily in brushing teeth. Smoking should be prohibited during treatment.

Periodontoclasia. This is a disease which tends to break down and destroy the supporting tissues of the teeth. Its early clinical symptoms are to be found in the gingivae, hence the importance of maintaining these tissues in health. Pocket formation is its distinguishing feature. Solution of continuity in the floor of the gingival crevice, no matter how slight, justifies the diagnosis of periodontoclasia. Pocket formation does not occur around all the teeth simultaneously, but around certain teeth that may become seriously or even hopelessly involved, while others may exist in the same mouth in perfect health.

The etiologic factors which are more or less common to all cases, and without which periodontoclasia could not occur, are lowered cell resistance and bacterial invasion, brought about in large measure through functional inactivity. These organisms, plus their toxins and enzymes, slowly destroy the involved tissues. Other factors may also be present and should always be considered.

TREATMENT

This has for its purpose two objects: the elimination of the pocket and the correction of the underlying cause, viz. —low cell resistance and infection. Either of itself is not sufficient. To eliminate a pocket, a careful and complete curettage of the root surface requiring a definite technic is necessary. This consists in removing from the root surface throughout the involved area all calculary deposits plus the dead

pericementum. When this is done and such attention given to occlusion and abnormal contact points as may be necessary, the results are usually very satisfactory, though it is never possible to restore to the patient that which has been lost; the receded gums, the exposed and frequently sensitive root surfaces, and teeth more or less weakened by the loss of osseous support remain as permanent witnesses to the greater value of prevention. In those cases in which disease has progressed to an advanced stage there may be individual teeth which it is impossible to treat successfully by curettage. These are the cases where resort to surgery may be necessary, such as the "flap operation" or gum excision. There are few, if any, cases where it is necessary or wise to treat an entire mouth in this way. The more skillful the operator, the less often will he find it necessary to resort to extreme measures.

The second phase of treatment is directed toward the restoration of function as far as that is possible, to the end that local resistance to infection be increased. This necessitates the replacement of lost teeth and the establishment of normal contact points through the use of properly made fillings, in order that functional mastication be made possible. The patient is then encouraged to use the teeth and jaws vigorously and to supplement this by artificial means. This latter would not be necessary if mastication provided the stimulation it was designed to do, any more than it would be necessary for the laborer at the close of his day's work to swing Indian clubs for the exercise of his body. Under the artificial and more or less unnatural conditions of modern civilization the toothbrush has become an important agent in the prevention and treatment of periodontal lesions. Its first object is to cleanse the mouth and teeth. By so doing, it reduces the bacteria, plus their by-products, at the same time decreasing the mechanical and chemical irritation caused through the accumulation of tartar and food particles. In the second place, it should increase resistance through its stimulating influence upon circulation. And, lastly, it should do both of these, i.e.—clean the teeth and increase resistance without injury to either teeth or gums. Any method of tooth-brushing that will accomplish this, whether it be that of Charters, Stillman or Fones, can be recommended.

Thus it will be seen that periodontia embraces the whole of dentistry: orthodontia, for the establishment of correct occlusion—of first importance in periodontia; operative dentistry, for the maintenance of normal approximal contacts; prosthodontia, for the replacement of lost teeth, without which complete physiologic function is impossible; and, lastly, exodontia, for the removal of teeth hopelessly diseased.

But more important than any or all of these which go to make up modern dentistry, and of transcendently greater value to the patient, is prevention. And let it be said with all possible emphasis that there is no group of diseases occurring in the human mouth more easily prevented than those involving the tissues surrounding and supporting the teeth. And the greatest aid to that end is oral hygiene.

58 West 47th Street.

Early American Dentistry

By HERBERT MANCHESTER, New York, N. Y.

In the first decades of the nineteenth century American dentistry was as yet far from being a recognized profession. On the one hand, it was attempted by unskilled workmen without any training whatever, while, on the other hand, physicians had a tendency to consider it merely a branch of medicine or surgery.

A peculiar slant on what some of the dentists themselves thought of their province is afforded by the story that, when John Randall went to a supposed dentist to have some teeth preserved by filling, the dentist told him that it was his business to pull teeth and put in new ones and not to attempt to preserve them.

Because of this, Randall, while still in Harvard, taught himself something of dentistry, though he later considered himself chiefly a physician. In a similar way both Horace H. Hayden of Baltimore and Leonard Koecker of Philadelphia, who later became prominent dentists, taught themselves, because there was no place in their vicinity whither they could go for instruction.

Koecker gave a vivid description of how he first pulled a tooth for a patient. He grasped the tooth with his instrument, shut his eyes and, turning his head from the patient, gave a tremendous yank. This dislodged the tooth, but he was under so much excitement that he did not know it was out. While he stood there trembling, however, the patient assured him that he had never had a tooth extracted more easily.

Not all the dentists of those days were self-taught. Gardette and Edward Hudson, who practiced in Philadelphia, were both trained in Europe. Hudson, whose father was considered the best dentist in Dublin, is said to have been the first dentist in this country to make a regular use of gold-foil for filling.

At that time, according to Eleazar Parmly, Randall and Greenwood had all of the best practice in Boston, while Parkhurst, Wooffendale, Gaetin and Greenwood had all that was worth having in New York. About the only dentist in Baltimore was Hayden, who was also a mineralogist.

Greenwood of New York, who had made a complete set of teeth for George Washington, according to J. Brockway, was still wearing as a watch seal the last tooth he had extracted from the President.

Brockway wrote that in 1811 he inherited the dental instruments of his brother, who had practiced for only a year in Boston before his death. Brockway did little until after the second war with England. At that time, he declared, he was the only known dentist from Canada to Albany and from the Rockies to the White Mountains. He knew of but one other who visited that territory prior to 1822, and that was a Dr. Lyscomb, who was educated in medicine.

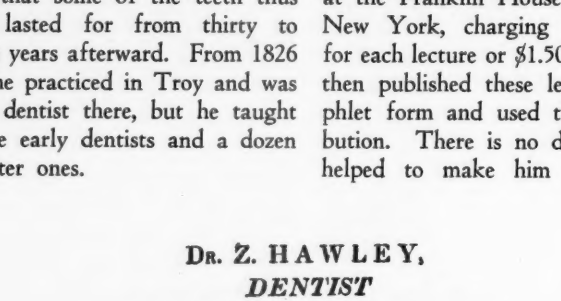
It was a surprising fact that Vermont supplied a dozen of the early

known dentists, which was more than there were from all of the other states put together.

Brockway wrote that chiefly he used tin-foil for plugs and used it regularly where they were not in view. He declared that some of the teeth thus plugged lasted for from thirty to thirty-five years afterward. From 1826 to 1829 he practiced in Troy and was the only dentist there, but he taught six of the early dentists and a dozen of the later ones.

successfully treated before the teeth became decayed.

In 1820 Parmly returned to America. His method of establishing himself in business here is of considerable interest. He gave lectures on the teeth at the Franklin House on Broadway, New York, charging 75¢ admission for each lecture or $1.50 for three. He then published these lectures in pamphlet form and used them for distribution. There is no doubt that they helped to make him considered an



DR. Z. HAWLEY,

DENTIST

No. 91 NASSAU STREET.—NEW-YORK.

Draws Teeth and Stumps, and performs every other operation in Dentistry.—For testimony of skill, the public are referred to the following recommendation:

Whom it may concern;

This certifies, that Doct. Zerah Hawley is a regular bred Physician and in good standing with his brethren in this place, that he has paid particular attention to the art of Dentistry, has studied the best European works on the subject and has given very good satisfaction in this branch, to his customers, who are persons of the first respectability in this City.

We therefore, with entire confidence, recommend Dr. Hawley to the Citizens of New-York as a Dentist.

New-Haven Jan. 22 1818.

ÆNEAS MUNSON,
NATHAN SMITH,
ELI IVES,
JONATHAN KNIGHT.
} Professors of the Med. Institution Yale College.

How a physician attempted to establish himself as a dentist in 1818.

Several of the early dentists, who originally came from Vermont, were the Parmlys. Levi Spear Parmly, who had been instructed by Dr. Petrie and Dr. Randall of Boston, commenced practice in Montreal in 1815 and a few years later set up for himself in London. There he was among the first to emphasize the fact that caries attacked the teeth from without instead of from within, and that therefore it could be

authority on the subject and greatly aided in inspiring confidence. A striking insight into the terms upon which one dentist trained another in those days before the first American dental college is given in the following notice, published at the end of Parmly's lectures:

"Mr. Parmly, being desirous that his peculiar treatment of the teeth, his operations and general views of the

subject should become as widely diffused as possible, for the common benefit of society, undertakes to qualify gentlemen of liberal education for practice as Dentists on the following terms:

"For practice in London . . . $1,000
"In any other city of Great Britain or America 700
"For foreign practice . . . . 500"

These figures must be compared with the wages of the average workman of that time, which were only about a dollar a day.

The difference between the cost of training for practice in London and in other cities was due largely to the fact that Parmly wished to avoid future competition from his students, especially in London, though there may also have been various refinements in the practice for the great metropolis.

When Levi S. Parmly began practice in Montreal, he persuaded his parents to let his brother, Eleazar Parmly, come to him there to learn the new profession. As Eleazar afterward wrote:

Meanwhile an elder brother came
From Boston, where he'd gained the fame
Of cleverness in every part,
Pertaining to the Dental Art;
And finding me without employ,
A busy, restless country boy—
Proposed that I should leave the land
And try my then unpracticed hand
To imitate, in skill, his own,
By carving teeth from sea-horse bone.

According to a later account by Eleazar, it was in 1815 at Quebec that he first saw a tooth that had been stopped with gold. This had been done by Waite of London, and Eleazar marveled at the nicety of the workmanship. In 1817 Eleazar started as an itinerant dentist, working his way from Philadelphia to New Orleans. Such trips were in common practice at that time, because the towns were not sufficiently educated to the need for dentistry to create a demand for work proportionate to the population. Before his trip Parmly used only tin-foil for stopping teeth, but at Lexington, Kentucky, he saw two girls whose teeth had been filled with gold by Edward Hudson of Philadelphia. These examples, with the one he had seen in Quebec, made him determined to try gold filling. He therefore took a gold coin to a silver-plater in Lexington and commissioned him to hammer it into foil. This the silversmith did, producing a foil that was even thinner and better than Parmly had expected, and from that time Parmly used gold-foil for the most important cases, though he wrote that his work was yet crude.

For false teeth Parmly had been accustomed to going to slaughter houses and collecting teeth, which he had to file down to human form, but at Lexington he observed the first mineral tooth he had ever seen. This was in the mouth of a gentleman who had recently arrived from France. It impressed Parmly as being vastly superior to the old false teeth and made him highly curious to know how they were produced.

Parmly seems to have taken two years to work his way down the river, for he afterward penned the lines:

For two years more I labored through
A practice such as I could do,
Where hospitality abounds
Among the growing western towns
From Pittsburgh on to New Orleans.

"In all that time," he wrote, "I met with no other person who even called

himself a dentist, from Philadelphia to New Orleans, and I practiced in the principal towns between the two places."

At New Orleans Parmly saw for the first time a gold plate that had been fashioned from a model. This had been made in London and further decided him, "feeling a total want of a knowledge of the profession," to go to Europe to study.

After studying gold filling and mineral teeth there, Parmly again visited London, where his brother was then in practice. He called on Waite, whose fillings he considered best, and, though Waite was out, he was shown some of the soft but thick gold-foil employed by him. It was said that Waite expected his stoppings to last until old age, and that he produced knots on his hands in putting them in.

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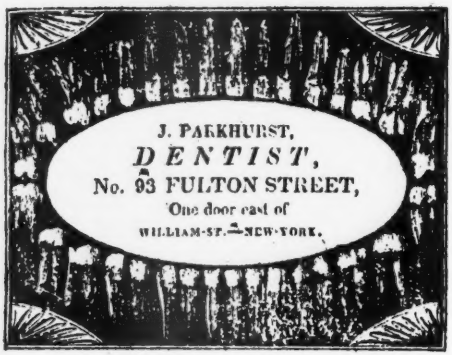

Draws Teeth and Stumps, and performs every other Dental operation.

Card of Parkhurst, who, according to Parmly, "shared all the worthwhile practice in New York."

First he went to London, where he called on the dentists and was received politely, but he decided to go on to Paris. In Paris also the dentists received him with consideration, and Maury, dentist to the King's household, showed him the first complete dental cabinet in his experience. Parmly thereupon made arrangements with Maury to complete his studies.

When Eleazar Parmly returned to New York in 1822, he was astonished and discouraged that dentists were not more highly thought of there. As he later wrote:

For lo! the dentists of that day
Received from patrons work and pay,
And when the interview was o'er
Acquaintance ended at the door.
And rarely could a dentist meet
A recognition on the street.

320 West 84th Street.

Hudson County Dental Society

Resolution

The following resolution was adopted by the Hudson County Dental Society at a meeting held November 2, 1928:

Whereas, Vincent's infection of the mouth, commonly known as trench mouth, is a widely prevalent disease in various degrees of intensity among a large percentage of the population;

Whereas, It is a constant source of danger to health and life because of its contagious nature and its possible fatal results;

Whereas, This infection has now been made a reportable disease similar to other contagious diseases in a number of states throughout the country; therefore be it

Resolved, That the Hudson County Dental Society, as a recommendation of its Mouth Hygiene and Dental Health Education Committee, go on record as being in favor of the adoption of legislation making Vincent's mouth infection a reportable disease in the State of New Jersey.

It is further resolved that this be spread upon the minutes of the Hudson County Dental Society, and that a copy be forwarded to the Legislation Committee of the New Jersey State Dental Society, the Hudson County Board of Health and the New Jersey State Board of Health, and also to various dental journals.

J. Frank Burke, *Secretary,*
I. S. Miller, *Chairman,*
Mouth Hygiene Committee.

[Asepsis of value]

While many teeth have been treated, pulps removed and canals filled successfully without any particular attention to aseptic precautions, it is my opinion that a great many other teeth which were so treated might have terminated more happily for the patients if due precautions had been taken.

—Meisel.

DIGESTS

DENTAL INFECTIONS

By Harlow Brooks, M.D.

While the essayist states that he has a great admiration for Dr. Rosenow and his work, yet it must be borne in mind that the work has never been corroborated by a first-class bacteriologist outside of the Rosenow school.

The average dentist has been swept off his feet and has performed many unnecessary extractions. For this the medical profession is greatly to blame. During the past year the essayist has seen three deaths due to ill-advised extractions.

A tooth should not be removed as a matter of routine just because it is infected. Operative procedure should not be wholly based on laboratory experiments. There are many locations for non-draining infections, and the teeth are not the sole offenders. Anatomically the chances are 100 to 1 that the origin is not in the teeth. Many local infections may exist without one single general bad result.

When a tooth is extracted, the greatest care should be used. An extraction that traumatizes the tissues, opens up the lymphatics or injures the blood vessels may prove fatal. Curettage may start an osteomyelitis.

The physician should decide whether or not the dental condition is important in the case under consideration. The dentist should decide what is to be done.—*The Dental Outlook,* November, 1928.

THE VALUE OF GOLD FOIL IN MODERN PRACTICE

By C. N. Johnson, D.D.S.

"The value of gold foil in modern practice is found in its application to such cases as pit and fissure cavities, to all cavities in the molars and bicuspids where access is not too difficult and where the tension is not too great on the patient—in other words, where a good technic may be obtained without undue stress—and to all cavities in the anterior teeth where esthetics may be sacrificed for utility and length of service.

"With a full recognition of the exceptions to these cases, there still remains a wide field for the legitimate use of foil, and to ignore its use under its proper indications is to fall far short of the best service to the patient. As

has already been said, there is no material as reliable as this, and to discard it because of its exactions or its few limitations, in the face of its manifest and manifold virtues, is either to ignore unlimited opportunity for the best service or to shirk supinely an insistent and moral responsibility."—*The Journal of the American Dental Association,* November, 1928.

TEETH AND TRIGEMINAL NEURALGIA

By Prof. Dr. med. Max Melchior

"1. Dental neuralgias, the so-called *neuralgiform facial pains,* false or untrue neuralgia, may in appearance quite resemble a genuine or true neuralgia. The two kinds are often mistaken for one another, with disastrous results for the patient.

"2. On close examination, a great many of the so-called *genuine* neuralgias disclose a peripheral origin, which most frequently is found in relation to the dental system.

"3. Dental neuralgias may be due to teeth extracted a long time previously. The extraction may, in various ways, give rise to pathological changes in the jaws which years later may be the origin of neuralgia.

"4. Dental neuralgic pains may be localized exclusively to nerves other than the trigeminal.

"5. The diagnosis of dental neuralgia may often prove extremely difficult and may require a meticulous examination, not only of the teeth, but also of the jaws. In doubtful cases a supplemental x-ray examination should always be made, especially of the toothless parts of the jaw.

"6. The prognosis is favorable if the dental cause is discovered, as its removal may lead to complete recovery, even after a long-standing complaint.

"7. The diagnosis of genuine idiopathic neuralgia should not be arrived at before every possibility of dental origin has been excluded." — *The Dental Cosmos,* November, 1928.

TRIGEMINAL NEURALGIA AND ITS TREATMENT BY ALCOHOLIC INJECTION

By Arthur E. Smith, D.D.S., M.D.

"Tic douloureux, or true trigeminal neuralgia, is a disease the etiology of which is unknown. Without treatment, the paroxysms become more frequent and increase in their intensity and severity, making life almost unbearable, undermining the general health and incapacitating the individual from daily work.

"Nerve avulsion of the peripheral

branches gives only temporary relief, and then only in some cases. More satisfactory results are obtained from the alcoholic injection. Peripheral nerve avulsion is only indicated on those individuals who cannot undergo the major operation for the severance of the sensory root of the fifth nerve or who have become immune to the effects of alcohol injections.

"Deep alcohol injections into the Gasserian ganglion, the superior maxillary and mandibular divisions, should be given before subjecting the patient to the major operation, for two reasons: 1. If the injection has been properly given, the patient may be relieved of all pain for months, years, or possibly life. The injections are not dangerous when properly executed, and can be repeated as often as necessary. 2. After a patient has undergone blocking with alcohol once or several times, he is better prepared to undergo the radical operation for severing the sensory root, as he has experienced the anesthesia and paralysis from the effects of the alcohol, which also follow the major operation, and even to a more pronounced degree.

"If the patient is suffering from true trigeminal neuralgia or tic douloureux, the removal of teeth, the draining of sinuses, the removal of cysts, pulp stones, etc., will prove of no avail. If the pain subsides after such operations, the operator was dealing with a typical neuralgia of the symptomatic type and not that of tic douloureux.

"The radical operation should not be performed until the patient has been given the benefit derived from alcoholic injection, as there is a possibility that there would be no need for the major operation. After blocking has failed to render permanent relief, there is time for surgery. Blocking the Gasserian ganglion or the maxillary and mandibular divisions is a surgical procedure, requiring skill in technic and thorough knowledge of anatomy."—*The Journal of the American Dental Association,* November, 1928.

Foreign Dental Literature

THE ORIENTATION OF THE DENTITION IN ITS SPACE

By B. R. Bakker, Utrecht, Holland

The author comes to the conclusion that symmetry in occlusion is not common, but notwithstanding this fact there is no reason why an asymmetrical occlusion should not be able to perform the same proper function as would a symmetrical one. He says that the anatomist likes to take hold of mathematics and the works of art and draw or work out of them fixed principles for his theories. These facts must be taken into account and not be confused and inflexible standards should not be their consequences.

The orthodontist as a researcher tries to resolve the problem from dif-

ferent planes which are in relation to the occluding plane and during the treatment of a case in his practice he must always have a fixed plane, which should not be varied during the treatment, for a millimeter would make a vast difference in the movements of the teeth. When this same problem of occlusion presents itself to a prosthodontist, however, this same variance of one millimeter in the arrangement of the teeth (be it forward, mesially or distally) would be quite another proposition. Here the difference would be so slight as not to be worth taking into consideration.

In the different planes that we take as a basis for our studies, as we have to apply them to an asymmetrical body, we must fix in mind that there are two relations, one between the dental arches and the skeleton of the face, the other between the dental arches and the bones of the cranium. He says that practically there are no symmetrical dental arches, that every one of them shows at least some asymmetry, and that in the maxilla the raphe is not in the median plane. This latter is shown clearly in the deviation of the septum of the nose, and also in the external and visible deviation of that organ.—*Korrespondenz-Blatt für Zahnärzte,* 1926, Berlin, Germany.

THE FORM, SIZE AND PROPORTIONS OF THE ANTRUM OF HIGHMORE

By PER VON BONSDORFF, Helsingfors, Finland

Bonsdorff says that the antrum is somewhat larger in man than in woman. He has found the average to be 8.5 cm. in capacity, while the capacity given by other authors varies between 2 cm. and 25 cm., or an average of 11 cm. The author mentions that he found an anomalous cranium having no antrum in either maxilla.—*Odontologisk Tidskrift,* 1926.

THE MICROSCOPICAL ANATOMY OF THE MAXILLA IN THE NEO-NATUS

By P. H. G. VAN GILSE

Gilse has made a special study of the embryonal microscopic structure of the maxilla and has already published several papers on the subject. His object in this paper is to demonstrate that the so-called *osteomyelitis of the maxilla* which is frequently observed in the suckling infant can be brought about by an inflammation of the antrum, the accessory sinuses or the nose, owing to the fact that the glands in the mucous membranes lining these cavities are found to be numerous and greatly developed in the embryo and infant, especially in the antrum, and therefore give free access to the diffusion of the

inflammatory or the infectious propagation from or toward the antrum.

He shows also in decalcified sections that a broad connective tissue mass unites the tooth-germs to the antrum, which accounts not only for the harm that these germs may suffer from any pathological condition propagated from the antrum but also through pressure bearing upon these germs causing them to assume an anomalous position which will eventually lead to the development of a malocclusion. Up to the present, he says, literature mentions the bone tissue in the maxillae to be thin, contrary to the facts as he shows them, and that they are massive, needing therefore also a thick mucous lining membrane, which in case of an infection would be an easy road for the propagation of any inflammation.—*Nederlandsch Tijdschrift voor Geneeskunde,* Haarlem, Netherlands, 1927.

SPECIAL FINDINGS IN RACHITIC TOOTH-GERMS

By E. Kotanyi, Vienna, Austria

Dr. Kotanyi studies the influence which calcium metabolism may produce in the development of the deciduous tooth-germs, especially at the enamel-dentin border, where the cement begins to form and at the moment when the formation of the dentin is in process. This lack of calcification in the dentin does not take place in the circular form all around the neck of the tooth but in isolated areas. His specimen shows single, deficient calcified zones of the dentin at the gingival border of the root, having no cement covering, alongside good, calcified and faultless dentin which is covered with its normal cement layer.

The same findings were observed also in the permanent teeth of an ape, where the faulty dentinal portions were found to be at the apical third of the root, as well as at the mesial and distal parts of the gingival portions of these roots. The human specimens ranged from 6 to 16 months of age. The boundary area between the calcified and uncalcified dentin is irregular in the rachitic, as is also the arrangement of the globuli and of the interglobular spaces. From his observations, he says, when interpreting his findings, a calcium metabolism takes place from the pericementum, which indicates an external calcification. This has already been observed, among others, by Orban.

Probably under normal conditions, and surely under pathological ones, a supply of calcium is conveyed to the dentin at its enamel-covered portion more readily than at its cement-covered part in the gingival line. According to Erdheim, under unfavorable calcification conditions the new calcium is not deposited evenly on all parts but imperfectly in that determined zone. Those areas needing more protection are always benefited first by this metabolism, which observation leads Erdheim to believe that there is a calcium-

protective law (selection). This finding would justify therapeutic calcium diet for the improving of rachitic teeth when these symptoms are observed, especially in the dentin, and probably also in mouths with extensive caries.—*Vierteljahrsschrift für Zahnheilkunde,* Berlin, Germany, 1928.

THE EXISTENCE OF LYMPH VESSELS IN THE DENTAL PULP

By E. A. SOLKOWER
Physiological Laboratory of the Medical Institute, Kier

Owing to the failure in preserving the vitality of the pulp when accidentally exposed, or when under the most painstaking aseptic and rational treatment it has been capped for some reason or other, even after a slight trauma, etc., as the pulp has often failed to regain its physiological functions, for a long time the existence of lymphatic vessels in the pulp has been denied or doubted. Recently, however, some doubt has been expressed, for it is not logical that such a complex organ as the pulp should be lacking these vessels. The latest investigators have been trying to demonstrate this, and Solkower describes his investigations.

Following Magnus's technic, the author takes freshly extracted pulps and immerses them in hydrogen peroxide. The ozone liberated here is forced into the lymph and blood-vessels, which appear as a tress-work or texture of a brilliant, silvery-white color, the lymph vessels being distinguished by their numerous nodules, which give them the unusual beadlike appearance. He describes them as running in the same way as those in the lymph vessels in the rest of the body, having their perivascular lymph spaces. His investigations have been carried out successfully in pulps of both deciduous and permanent teeth.

Investigations to establish a proper technic toward protection, capping and treatment of non-toxic pulp inflammation should lead us to a proper and scientifically conservative treatment by proper therapeutical measures.—*Anatomischer Anzeiger,* Jena, 1927.

CONOID POST-CUSPID SUPERNUMERARY TOOTH IN THE HUMAN DECIDUOUS DENTITION, WITH A CORRESPONDING SUPPLEMENTARY CUSPID TOOTH IN THE PERMANENT SERIES

By SIRO TAVIANI, Florence, Italy

In a specimen of a Peruvian cranium in the Museum of Anthropology in Florence, Taviani studies a case in process the corresponding substitute. He says that this is the only case which has been recorded of a supernumerary

which a supernumerary cone-form deciduous cuspid occupied an apparently normal position between the normal deciduous cuspid and the first temporary molar tooth, and on dissecting the bone he found in the alveolar cuspid having developed a normal permanent germ and draws the conclusion that it is a reduced conoid type.—*Archivio per l'Anatomia e l'Etnologia,* Turin, 1927.

THE DENTO-FACIAL VARIATION DUE TO THE LACK OF OSSIFICATION IN CIVILIZED PEOPLE

By Andersen Viggo, Oslo, Norway

Experiments on animals fed on concentrated light digestible food not needing mastication leads to somatic alterations, especially in bone development. Air and light also play a very important factor. Animals submitted in captivity to entirely different modes of living, including the manner of feeding, suffer the most at the expense of the teeth and jaws, where the want of nourishment is plainly shown in the lack of proper development. First the underdevelopment and later the lack of proper nutrition for the teeth and bones bring about structural changes, due principally to faulty calcium metabolism.—*Den Norske Tandlaegeforenings Tidende,* Oslo, Norway, 1927.

ALTERATIONS IN THE PULP, WITH SPECIAL REFERENCE TO THE FORMATION OF SECONDARY DENTIN, PRODUCED THROUGH IRRITATION FROM CUNEIFORM ABRASION

By Eugen Wannenmacher, Tübingen, Germany

The author is attempting to establish a difference in the diagnosis of the affections of the pulp and especially between the injuries to the pulp produced by toxic and bacterial action, caries, irritations, etc., and the pathologic degenerative process due not only to the action of age upon the pulp and age of the individual but also to wasting diseases, diathesis, chronic irritations, etc.

Under this last division of pathologic degeneration he includes especially the cuneiform abrasion and tries to explain it by studying under its histological basis the biological process which in very slow developmental phases takes place in the pulp while it is trying to protect itself from irritation and invasion. This he views as not being a clear pathologic irritation but one of a physiological character.

After mentioning the investigations of these cuneiform abrasions made by Miller, Wedl, Walkhoff, etc., who have established that these forms of abrasion are due to an intensive (defective) use of the toothbrush accom-

panied by the coarse, granular abrasives which enter into the composition of some of the tooth powders, he publishes his own observations. The author has observed and calls attention to the fact that he has always found in the serial microscopical sections that the largest formation of secondary dentin is always toward the apical end of the pulp, while in the direction of the coronal part of the pulp, although the same alterations in the various layers of odontoblasts are observed and are accompanied by dilatation of the vessels, the deposition of secondary dentin is small, forming only a moderate layer. This is also in accord with the geometrical form of the external defect, there being a greater biological reaction at the deepest portion and toward the area to be invaded by the expected new irritation.

According to his observations, he does not find the structure of the pulp to be deeply altered, apart from the irregular arrangement of the odontoblasts, the dilatation of the vessels and an increased proliferation of the elements of the connective tissue. This confirms the theory of Walkhoff, who has stated that all these phenomena observed in the pulp are due only to the irritation occasioned by the pressure of the secondary dentin.

The author has observed that the histological structure of the secondary dentin is disposed or arranged with extraordinary regularity. The fact that the formation of secondary dentin does not take place so evenly in area of depth as that which is observed to be developed under carious invasion, but that it invades toward the root end of the pulp, leaves no doubt that in extreme cases the crown portion of the pulp is doomed, and that it cannot protect itself against the loss of its hard structure. This phenomenon can be considered as a strangulation of the crown pulp.

The practical conclusions to be deduced from these observations in relation to operative dentistry are:

(1) In small cuneiform abrasions a filling will restore the normal functions of the pulp and will tend to the conservation of its vitality, while in large abrasions the recovery of the functions of the pulp is dubious, notwithstanding the fact that its structural alterations are not to be considered as endangering its vitality in all cases.

(2) Should a root-canal treatment be necessary in teeth with cuneiform abrasions (or those that have been filled on that account), we should expect to find impracticable (obliterated) canals due to large formations of secondary dentin and sometimes to pulp-stones.—*Korrespondenz-Blatt für Zahnärzte*, Berlin, Germany, 1927.

PRACTICAL HINTS

THIS DEPARTMENT IS NOW BEING CONDUCTED FROM THE OFFICE OF THE DENTAL DIGEST. TO AVOID UNNECESSARY DELAYS, HINTS, QUESTIONS AND ANSWERS SHOULD BE ADDRESSED TO EDITOR PRACTICAL HINTS, THE DENTAL DIGEST, 220 WEST 42D STREET, NEW YORK, N. Y.

NOTE—Mention of proprietary articles by name in the text pages of THE DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule.

BLUE SPOTS ON THE GUMS.—In reply to the letter of W. H. S. in the November issue of THE DIGEST, regarding a case of "blue spots" on the gums, I have a similar case on hand at the present time. The patient is also a young woman and gives a history of having worked in a place manufacturing novelties such as vanity cases, etc., where she used to do the enameling. This required the use of fine paint-brushes, and, to get the best results, employees were in the habit of sticking the brushes in the mouth to get fine points on them while working. The ingredients in the paint or enamel would thus get onto the gums. Since the x-ray reveals nothing wrong, and as there is nothing else as far as we know that might account for this pigmentation or blue spots, I am of the opinion that in this case the patient's former occupation is the etiology of this condition.

As for treatment, the ultra-violet ray has been suggested.

O. I. O., Brooklyn, N. Y.

Editor, Practical Hints:

I have a male patient, about 55 years old, for whom I made full upper and lower vulcanite dentures. As soon as he takes food in his mouth with the upper in place he complains of a taste similar to that of nitrate of silver. There is no trouble from the lower. He is a heavy cigarette-smoker.

A physician has been trying to give him relief, thinking perhaps it might be due to an acid condition, but he has had no benefit from treatment. He had pyorrhea quite badly before the teeth were extracted. Without the upper denture in place there is no offensive taste. He is not troubled with any nausea when the denture is in the mouth.

C. S. M.

ANSWER.—We will publish this in THE DENTAL DIGEST and perhaps some reader can help you out.

Editor, Practical Hints:

I have a patient, a woman about 60 years of age, who has been having considerable trouble with burning and smarting in the fissures of her tongue. She has had this trouble for about

seven months and has been to several physicians, but none of them has been able to give her any relief.

I extracted all of her teeth about four months ago, but that did not help nor did it make it any worse. She seems to be—and the doctors say that she is—in good health in every other way. Her tongue and mouth look good and healthy, but nothing seems to stop this burning in the fissures of the tongue.

Z. W. A.

ANSWER.—It would seem from the symptoms you describe that the patient is suffering from an affection of the nerves of the tongue due probably to some focus of infection, which may be located in the jaws, the sinuses or some other place in the body. Sometimes it is very difficult to find the cause.

Editor, Practical Hints:

On page 807 of the November (1928) DIGEST, in *Practical Hints,* is an inquiry by Dr. P. A. I want to suggest that what I have to say here is delicate and may be wholly wrong, but many times there has arisen in my mind a doubt about the fitness of mercurochrome.

I was in an auto accident last winter and had a bit of flesh gouged out of my shin. I had the wound cleaned and dressed immediately by a physician. He used a trick light and, of course, mercurochrome. He also used mercurochrome later on, but I did not like the way the wound healed. There was always a big scab that held in quite a quantity of viscid pus (greenish). All in all it acted peculiarly.

Since then I have had occasion to use mercurochrome once or twice externally, i.e., not in the mouth, and it did the same thing.

I am a husky, healthy individual, 45 years old, and so far as I know am full of resistance and so on, including an inclination to go fishing.

Do you think, by any chance, that this mercurochrome is in any way responsible for *my* display or for the condition this man had? Of course, he is 64 years of age and at this great distance one is apt to jump at another conclusion.

I should be much relieved to hear something on this, inasmuch as the mercurochrome is used so extensively, and especially on the children in their everyday casualties. I have never seen any such results on them.

H. G. B.

ANSWER.—Thank you for your letter in regard to mercurochrome. We are always glad to hear of experiences of this kind.

Certain people have idiosyncrasies to various drugs, and the cases you have observed—and also the one published—may come under this heading.

CORRESPONDENCE

Editor, DENTAL DIGEST:

In your November, 1928, issue, under *Practical Hints,* E. O. S. asks about his patient whose teeth are a bright yellow color. It may be that the following incident will be of assistance in finding the etiology of this condition.

About seven years ago I was in charge of the patient's examining room of the College of Dental and Oral Surgery of New York. My chief was William Carr, M.D., D.D.S. Dr. Carr was, in my opinion, one of the Grand Old Men of the dental profession, a typical gentleman of the old school and a veritable mine of information. His office was just across the hall from the examining room in which I worked. Whenever a case presented that puzzled me, I stepped across to Dr. Carr, and he was never too busy to look at the patient and impart information.

One day a lad of about fifteen years of age presented for examination. His teeth were of a lemon-yellow color. I called Dr. Carr. He glanced at the boy's teeth and, after dismissing him, told me that the color of the teeth was due to hereditary syphilitic taint.

As Dr. Carr had had extensive experience in the care of luetic patients and had a wide reputation as a syphilologist, I am inclined to credit his diagnosis of the case.

In the same issue of your splendid magazine Dr. Heman Anderson, of Perth Amboy, N. J., bemoans the assumed fact that the dentists of old were much better than we are, in his article *Are We As Wonderful As We Think We Are?* The good doctor bases his opinion upon the work of an Ancient Mariner—no, I mean Dentist—who recently passed to his reward, after having practiced in that town for thirty-five or more years. Dr. Anderson sees frequently silver fillings which the Ancient Dentist put in many years ago and gold crowns which have seen service, lo, these many years!

The explanation is simple. Those teeth in which the Ancient Dentist's fillings were failures were extracted and forgotten long ago. Only those remain to bear testimony to his work which were successful. If recurrent decay is going to come along and destroy fillings and inlay work, it usually does so within a few years, in my experience. If the filling or inlay lasts five years, it has a good chance of remaining as long as the tooth stays in the mouth.

Please consider another thing. After a dentist has been in practice thirty years or so, his clientele is pretty well "fixed." He has about all he can do to take care of his old cases and does not see so many new ones as does a younger dentist. Therefore what he has left are the "boosters"; the "knockers" all left him years ago.

I believe that the dental profession is now doing better dentistry than it ever did before, and I believe that we can best serve our public *not* by look-

ing backward, but by ever looking forward and upward! Excelsior!

LOUIS WACK, D.D.S.

Editor, DENTAL DIGEST:

I read with considerable interest the article entitled *The Answer—Dental Economics* by Dr. J. F. Mitchell in the October issue of THE DENTAL DIGEST. His essay was very well written and full of the traditional "pep."

After reading it, I began the article on the following page, which started as follows: "It was Elbert Hubbard who said, 'Enthusiasm is like a lubricant. The proper amount facilitates smooth working; too much gums the works.'" What an apt thought that is to be applied to some of Dr. Mitchell's suggestions (no doubt inspired by the course he took two years previously)!

Every dentist knows and is trained to sell service of the highest type within his personal capacity. He is bound by a moral code of ethics to do what in his judgment will be best for his patient's welfare. Of course, there are unscrupulous souls, but they are of the great minority and too small a group to be even classified, hence we shall not consider them.

We can take cognizance of ourselves and arrange our practices so that we shall be justly compensated for the services we render. However, it is stretching the point a trifle too far when we make an additional charge for an anesthetic, which brings a simple extraction beyond the monetary reach of those who need the community dentist. Incidentally, why does the Doctor undervalue infiltration anesthesia by charging two dollars for it, while he suggests three for conduction? Is there less care needed? If so, why? Or does one have to use another cubic centimeter of novocain?

Another point which might eventually prove disastrous to the average dental practice. When Mrs. Jones calls to have the condylar portion of vulcanite relieved slightly on her full upper, is it worth the two dollars in your pocket to lose her good-will? I can hear the answer that if Mrs. Jones objects—your time (five minutes) is computed to be worth so-and-so much—then of course she ought to be eliminated as an "undesirable patient."

We should emulate the principle in use in every worth-while commercial enterprise which bears with it the respect of its clients, that is, the rendition of "Service-Plus." Gratitude is the reward for this service. And no enterprise can flourish for any length of time without the gratitude or goodwill of its purchasers.

Placing a dental practice on a systematic business basis and timing our operations is highly commendable. It is conducive to the upbuilding of a lucrative income.

We must strive as students of economics to gain for ourselves those things which cannot be bought or sold and are of infinite value, such as honesty, character, integrity. Then the material things of life automatically come to us.

Let us approach dentistry from its economic aspect and apply routines of commerce without fear of treading on dangerous grounds.

Dr. J. Leon Williams said, "Fear is

of the night when we cannot see, but courage comes with the light of morning and the exercise of our powers of vision."

Enthusiasm in our work is to be encouraged, yet not to a point of forgetting that there are more beautiful and priceless things in this world than dollars and cents.

S. J. BREGSTEIN, D.D.S.

[ENGLAND SHOWS CONSERVATISM]

(1) There is no pathologically, bacteriologically, or even clinically proved evidence that dental sepsis is the cause of diseases of the lungs or gastro-intestinal tract. Further investigations are necessary to prove the hypothesis.

(2) The extraction of all the teeth is always contra-indicated and only does harm to the patient. It is an unnecessary experiment.

(3) In cases of gingivitis and alveolar pyorrhea, the gums and the teeth should be treated, and only teeth beyond repair should be extracted.

—STOLKIND. *Proceedings of the Royal Society of Medicine.*

DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All questions and communications should be addressed to Elsie Pierce, care of THE DENTAL DIGEST, 220 West 42d Street, New York City.

NOTE—HAVE YOU A BETTER WAY? HAVE YOU A TIME-SAVING SHORT CUT? DO YOU KNOW A "STUNT" THAT LIGHTENS THE WORK OR MAKES FOR EFFICIENCY IN THE OFFICE? IF SO, WRITE TO ELSIE PIERCE, CARE THE DENTAL DIGEST, 220 WEST 42D STREET, NEW YORK. YOU MAY HELP A NUMBER OF GIRLS WHO ARE JUST BEGINNERS—AND YOU KNOW HOW YOU NEEDED HELP DURING YOUR FIRST FEW MONTHS IN A DENTAL OFFICE. OR IF YOU NEED HELP NOW WRITE TO ELSIE PIERCE—SHE'LL HELP YOU.

Dear Miss Pierce:

I should appreciate it very much if you could give me a few suggestions as to the cleaning and sterilizing of syringes and needles immediately after use; also, just how to prepare a syringe for use.

I highly enjoy THE DENTAL DIGEST in all its topics and give much thought to the suggestions in this wonderful Department.

W. N. S., Pleasantville, N. Y.

ANSWER.—All syringes after use should be thoroughly rinsed in warm water to remove all traces of the anesthetic solution, then placed in a sterilizer or other container and boiled for ten minutes. There are small sterilizers that are especially adapted for the care of syringes. If the syringe has glass parts, they should not be placed in boiling water but in cool water and brought to a boil and should be allowed to cool down before being removed. This will prevent the checking or cracking of the glass. Syringes should be thoroughly dried after sterilization prior to putting away. The most exacting technic calls for resterilization immediately before using.

You do not state the type of needles used. However, some authorities say that all needles should be boiled and suggest the use of a test-tube for the purpose, held in place over the flame by means of a clamp support. The needles are removed with sterile pliers and placed in a shallow, covered dish (glass) on a pad of sterile gauze. If the needles are of the type that are soldered to the hub, the moisture in the hub can be absorbed with a pellet of sterile cotton used as a wiper. Some operators flame their needles made of precious metals, but some authorities claim that this causes the needle to become very brittle, and there is danger of the needle breaking while in use. Some operators keep their needles in

an antiseptic solution, but this is condemned because of liability to rust and corrosion. The ten-minute boiling of all types of boilable dental instruments is the method which seems to find most favor. Longer periods may injure the finely tempered edges of cutting instruments. In surgery, hospital sterilizing technic is recommended. This means boiling for twenty minutes in a closed tank under pressure of from fifteen to twenty pounds, but all dental offices are not equipped for this procedure.

Dear Miss Pierce:

I should like very much to become better educated in the service of assisting the dentist. I notice in a recent issue of THE DENTAL DIGEST that a list of schools offering courses in dental hygiene was published in the September, 1927, issue. Unfortunately that copy is not available in our office, and I cannot find any information along this line in any other magazine that comes to the office. Please publish this list again for my benefit and that of others who may be desirous of the same information.

F. U., Leonardo, N. J.

ANSWER.—

School of Dental Hygiene, Forsyth-Tufts College, Boston, Mass. Director, Dr. Harold DeW. Cross.

Columbia School of Dental Hygiene, New York, N. Y. Director, Dr. Anna V. Hughes.

Rochester School of Dental Hygiene, Rochester, N. Y. Director, Dr. H. J. Burkhart.

School of Hygiene, University of Pennsylvania, Philadelphia, Pa. Director, Dr. J. E. Aiguier.

School of Dental Hygiene, Temple University, Philadelphia, Pa.

School of Dental Hygiene, Northwestern University Dental School, Chicago, Ill. Director, Dr. F. B. Rhobotham.

School of Dental Hygiene, University of Michigan, Ann Arbor, Mich. Director, Dr. H. E. Hartwig.

School of Dental Hygiene, Marquette University, Milwaukee, Wis. Director, Dr. H. L. Banzhaf.

School of Dental Hygiene, University of Minnesota, Minneapolis, Minn. Director, Dr. Leonard.

School of Dental Hygiene, University of California, San Francisco, Cal. Director, Dr. G. S. Millberry.

School of Dental Hygiene, University of Tennessee, Memphis, Tenn. Director, Dr. R. S. Vinsant.

We suggest that for any further information you may desire you get in touch with Miss A. G. Morris, Secretary of the American Dental Hygienists Association, 886 Main St., Bridgeport, Conn.

Dear Miss Pierce:

Please tell me what causes a kind of yellow tinge on some of the films that I develop. This does not happen often, but it is annoying to me, for I cannot understand it.

L. M., Pa.

ANSWER.—This may be caused by using stale developing solution or leaving the films in the developer too long a time. It is not practicing economy to use stale developer. Discard the solution when it takes on a dark-

ened appearance, even though you have not used it much.

Dear Miss Pierce:

The writer wishes to answer "W. W., Indiana," relative to the merits of Lysol as a sterilizing medium for instruments. In so far as "cold sterilization" is concerned, I personally believe that it is as effective as anything that may be used. The phenol coefficient of lysol is about three. It is therefore more rapid in devitalizing bacterial life than phenol and is many times less caustic and destructive to the hands. I do not see why a 20% solution of lysol should be used when a 5% solution will answer the purpose. There is no reason why even a 5% solution, let alone a 20% solution, should not prove to be efficacious. Bacteria are killed in less than five minutes when utilizing the 5% solution. The staphylococcus and streptococcus are absolutely rendered lifeless in that period of time.

Geo. J. Bleecher, D.D.S.,
Philadelphia, Pa.

Educational and Efficiency Society for Dental Assistants, First District, New York

The Educational and Efficiency Society for Dental Assistants, First District, New York, held its third meeting of the season on December 11, 1928.

Miss Hannah More Creasey, Instructor of Speech at Columbia University and also Supervisor of Speech in the Jersey City schools, spoke on *Psychology of the Subconscious.* Afterward Walter D. Barry, D.D.S., portrayed *Impressions of Dental Assistants in the Dental Offices of Europe.*

At the Better Dentistry Meeting of the First District Dental Society of New York, held at the Pennsylvania Hotel, December 3-7, 1928, the exhibits presented by the Educational and Efficiency Society proved interesting and successful, if one can judge by the large number of members of the dental profession who constantly gathered around the tables. This makes the young women realize that they are helpful to the profession. Then, too, a number of dentists asked how their assistants could become members.

Miss Ethel Meyerson, 27 West 86th Street, New York, will be pleased to send an application to any young woman employed in an ethical office. The Society meets regularly on the second Tuesday of each month, October to May, inclusive, at the Academy of Medicine, 2 East 103rd Street, New York.

Classes in connection with the Society's further efficiency and education. The class in Head Anatomy is extremely helpful. Dr. Harold Supplee is the instructor, and his patience and thoroughness are very gratifying to all who attend. This class will be followed by one in Evolution of Teeth and Tooth Carving. A First Aid class is being arranged for January; also, a class in Radiography, of which Dr. A. S. Greenfield is to be the instructor. Miss Agnes F. MacNeil, 579 61st Street, Brooklyn, N. Y., is Acting Director of Classes.

The Clinic Club, which meets the third Monday of each month, is an-

other means of instruction to members of the Society. The meeting in December was held on the 17th, at the office of Dr. W. B. Dunning, 140 East 80th Street, New York. The subject was *Dental Sterilization Technic and the Various Types of Sterilizers In Use.*

At the meeting of the Clinic Club on January 21, 1929, Mrs. Zeigen will demonstrate the sharpening of instruments. A large attendance is hoped for, as this subject is of vital importance to the assistant and should give wonderful working results to dentists.

Montreal Dental Assistants Association

Dr. A. L. Walsh, Dean of McGill University Dental Faculty, gave an interesting address on the *Anatomy of the Head* at the meeting of the Montreal Dental Assistants Association on November 19, 1928. Dr. Kerr of the General Hospital operated the lantern for the slides shown during the last part of the lecture.

Dr. Walsh dealt with his subject as closely as was possible, considering the brevity of time. Points of interest were brought out very clearly by a practical demonstration on a skull. In closing, Dr. Walsh turned from the subject of the skull to one of the most important aspects to be considered in a dentist's assistant, that of cleanliness. He emphasized the necessity of sterilizing all instruments after usage and of neatness in work.

American Dental Assistants Association
In Memoriam Resolutions

C. EDMUND KELLS

Whereas, In the passing of Dr. C. Edmund Kells, we, the members of the American Dental Assistants Association, have sustained an irreparable loss in one who has ever been sympathetic with our ideals, and who had contributed much to aid the aims of our Association and freely gave of himself and his knowledge whenever possible to aid all dental assistants; therefore be it

Resolved, That we, the members of the American Dental Assistants Association in convention assembled, on this twenty-first day of August, 1928, in loving memory of him whom we called "Friend," tender our sincerest sympathy to the members of Dr. Kells' family, and in so doing share with them their great loss. Be it further

Resolved, That this memorial resolution be spread upon the records of the American Dental Assistants Association, and that a suitably inscribed copy, signed by the President and Secretary, be sent to the family of Dr. Kells.

ARTHUR R. MELENDY

Whereas, In the passing of Dr. Arthur R. Melendy, we, the members of the American Dental Assistants

Association, have sustained an irreparable loss in one who ever sympathized with our ideals and freely gave a helping hand whenever possible and lent encouragement in our endeavors; therefore be it

Resolved, That we, the members of the American Dental Assistants Association in convention assembled, on this twenty-first day of August, 1928, in loving memory of him whom we called "Friend," tender our sincere sympathy to the members of Dr. Melendy's family and in so doing share with them their great loss. Be it further

Resolved, That this memorial resolution be spread upon the records of the American Dental Assistants Association, and that a suitably inscribed copy, signed by the President and Secretary, be sent to the family of Dr. Melendy.

Grace B. Renshaw,
Irene M. Cruze,
Helen H. Fitting, Chairman.

[THIRTY-TWO TEETH NOT NECESSARY]

In the consideration of partial restorations we do not subscribe to the theory that a full complement of teeth is essential to human health and happiness. While a full complement is most certainly desirable, there is abundant evidence on every hand that an efficient few teeth can serve all necessary functions. Therefore we do not feel that we are professionally delinquent when we advise against certain restorations.

—Gillis.

EXTRACTIONS

He who hesitates is honked!

To some mothers life is just one darn stocking after another.

A philosopher is a man who can look at an empty glass with a smile.

Hunting is really an annual excuse to dress like an old woodcut, act like Buffalo Bill and talk like Baron Münchhausen.

It is a rule amongst men in Minnesota to allow a woman half the road when driving, if they can find out which half she wants.

The Time is Coming

Before long, Gertrude will take along a parachute when she goes riding with a young man instead of wearing walking shoes.

Rapid Transit in New York

The Man Who Had Tried to Get From Seventy-second Street to Grand Central in the Traffic Rush one day, stopped and pointed at a passing taxicab. "Look," he said. "There's the cab in which I spent the early years of my life."

Of Course it Pays

The codfish lays a million eggs, and the helpful hen lays one;
The codfish never cackles to tell us what she's done;
And so we scorn the codfish, and the helpful hen we prize,
For it indicates to you and me that it pays to advertise!

The coming year is going to be a sorrowful period for snakes and vipers of every description, also seals, bullfrogs, alligators, lizards and other crawling things that can be skinned. The ladies have decided that they want shoes made out of the hides of these creatures—and that settles it—there's no escape!

A chap in South Carolina did not know the name of his bride-to-be when he applied for a marriage license. "I never called her nothing except Honey," he said.

A philosophical duffer when walking through a beautiful garden of flowers plucked a blossom of exquisite loveliness, and after expressing his admiration for it stooped down and scooped up a handful of unlovely soil and said: "What but Almighty power could extract *that* from *this!*"

In Finland they call bootleg liquor korpikunsen kyyneleita—even before drinking it.

Probably the happiest middle-aged man is the one who has no more idea than a rabbit what his blood pressure ought to be.

A hotel proprietor, whose hostelry was popular with traveling men, sent this wire:

"Applebaum and Greenbaum, New York City: Your salesman, Sam Goldstein, died here today. What shall we do?"

To the message the following reply was received: "Search his pockets for orders."

The time is here when the head of the family can go out and lie in a flatboat all night in a drizzling rain to shoot ducks, and then come home and sit in a draught five minutes and catch cold.

Science now gives man an age expectation of 71 years. But that's no reason why you shouldn't look at the traffic lights before crossing the street.

The Turk's Finish

I'm a plucked and helpless turkey
  Hanging limply upside down
On a hook within a window
  To be seen by all the town.
Mine is deep humiliation—
  Shameless do I seem and wan—
So would you on exhibition
  Upside down with nothing on.

Four-fifths of the perjury of the world is expended on tombstones.

Wall Street Dope

Sir—I am advised by an insider (he takes care of my furnace, emptying the ashes, etc.), to buy Indian Refining. He says it should go to 200 by January 1. Will you kindly tell me what to do?

Gideon.

Gid—Few men seem to have more authentic information on stock market values these days than ashmen. It is better to follow his advice than to ignore it. If offended he would in all likelihood refuse you further market forecasts. Indian Refining is, as you probably know, a large philanthropic corporation devoted to the work of refining Indians, and this company, already taxed to capacity, has enough unfilled orders to keep it busy refining Indians for the next twenty-five years.

FUTURE EVENTS

THE DELAWARE STATE BOARD OF DENTAL EXAMINERS will hold its next meeting in the Municipal Building, Tenth and King Streets, Wilmington, Del., January 16-17, 1929, from 9:00 A. M. to 5:00 P. M.

For further information, address

W. S. COMBS, *Secretary,*
Middletown, Del.

THE BALTIMORE CITY DENTAL SOCIETY will sponsor its fourth annual Mid-Winter Clinic on Friday and Saturday, February 1-2, 1929.

Paul R. Stillman of New York will clinic on *The Problem of Prevention of Dental and Periodontal Disease,* William E. Harper of Chicago on *The Fundamental Factors Involved in Making Amalgam and the Operative Procedure Necessary to Make Permanently Strong, Non-Leaking Fillings,* and Edward Kennedy of New York on *Partial Dentures.*

Emory C. Thompson of Buffalo, N. Y., also will be on the program and will present a clinic on fixed bridgework, inlays, or some new types of fixed attachments.

The number subscribing to the clinic is limited to two hundred, and applications are accepted in the order in which they are received, until the list is closed.

Checks should be made payable to Dr. F. Noel Smith, Treasurer, and mailed to Dr. George B. Jersin, Chairman of the Clinic Membership Committee, 317 Medical Arts Building, Baltimore, Md.

JAMES H. FERGUSON, JR., *Chairman,*
Medical Arts Bldg., Baltimore, Md.

THE DALLAS MID-WINTER DENTAL CLINIC, sponsored by the Dallas County Dental Society, will be held at Dallas, Texas, February 11-13, 1929.

The clinicians for this meeting are Drs. T. W. Maves, Cleveland, on oral surgery; James W. Crawford, Milwaukee, on prosthetics; Menifee R. Howard, Denver, on surgery, and Oren A. Oliver, Nashville, Tenn., on orthodontia.

BROOKS BELL, JR., D.D.S., *Secretary,*
Baylor University College of Dentistry,
Dallas, Texas.

THE MINNESOTA STATE DENTAL ASSOCIATION will hold its forty-sixth annual meeting in the Auditorium at St. Paul, Minn., March 6-8, 1929.

A cordial invitation to attend this meeting is extended to all members of the American Dental Association.

GEORGE D. ESTES, *Secretary,*
911 Yeates Bldg.,
Minneapolis, Minn.

THE TEXAS STATE DENTAL SOCIETY will hold its forty-ninth annual convention at Beaumont, Texas, April 16-19, 1929.

A cordial invitation to attend is extended to all ethical dentists who are members of state societies.

For information relative to exhibits, write to Dr. John E. Story, Chairman, Goodhue Building, Beaumont, Texas.

J. G. FIFE, *Sec'y-Treas.,*
Medical Arts Bldg., Dallas, Texas.

THE CONNECTICUT STATE DENTAL ASSOCIATION will hold its sixty-fifth annual convention at Waterbury, Conn., April 30 and May 1-2, 1929.

THE VIRGINIA STATE DENTAL ASSOCIATION will hold its annual meeting in the Hotel Danville, Danville, Va., April 30-May 2, 1929.

A. M. WASH, D.D.S., *Sec'y-Treas.,*
504 Medical Arts Bldg., Richmond, Va.

THE NORTH DAKOTA STATE DENTAL ASSOCIATION will hold its next annual meeting at Grand Forks, N. D., May 14-16, 1929.

L. I. GILBERT, D.D.S., *Secretary,*
Fargo, N. D.

THE DENTAL SOCIETY OF THE STATE OF NEW YORK will hold its sixty-first annual meeting at Rochester, N. Y., on May 15-17, 1929.

A cordial invitation is extended to all ethical dentists who are members of state societies to attend. The Society will be pleased to extend a cordial welcome to all ethical Canadian dentists also.

For information with reference to the exhibits, write to E. G. Link, 226 Cutler Bldg., Rochester,

N. Y.; clinics, John T. McIntee, Chairman, Cutler Bldg., Rochester, N. Y.; literary exercises, etc., A. P. Burkhart, Secretary, 57 East Genesee St., Auburn, N. Y.

THE AMERICAN SOCIETY OF ORTHODONTISTS will hold its annual meeting in Estes Park, Colorado, July 15-19, 1929. All ethical dentists are invited. A registration fee will be charged to non-members.

Hotels are Stanley (headquarters), The Crags, Lewiston and Elkhorn Lodge. For hotel information, write to Dr. Fred W. Beesley, Republic Bldg., Denver, Colo. Regarding transportation, write to Dr. Kirman E. Taylor, Mack Bldg., Denver, Colo.

ALBERT H. KETCHAM, D.D.S., *President*,
1232 Republic Bldg., Denver, Colo.

CHARLES R. BAKER, D.D.S., *Secretary*,
708 Church St., Evanston, Ill.

A. D. A. MEETING

OCTOBER 7-11, 1929

WASHINGTON